An Historical and Comparative Study of Schools Television in Britain and Iran: analysing the production criteria for teaching mathematics in primary school as case study to examine how to enhance the quality of Schools Television in Iran

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By

Seyed Hassan Jamalinik

School of Arts and Education

Middlesex University

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To my dear Nikki

ABSTRACT

The population growth in Iran over the last three decades has made it enormously difficult for the government to provide equality of educational opportunity. Accordingly, the government, in 2002, re-established a national education television network as one component of the solution to the problem of mass education. However, due to the scarcity of experience in the production and distribution of educational and Schools Television programming in Iran there is need to benefit from the practice of other cultures. This research explores the benefit of half a century of experience of schools broadcasting in Britain. In order to see whether or not the production criteria and models of British schools broadcasting might be useful to enhance the quality of Schools Television production in Iran, this research has employed a tripartite system of investigation. First, an extensive historical survey of the educational and school broadcasting provision in both Britain and Iran was conducted, in order to establish significant similarities and differences. Second, research was conducted into relevant pedagogical theories, cultural context, and aspects of the effectiveness of television as pedagogy to explore how learning from television takes place. Third, a comparative study was made of the production processes, values and textual strategies used by current Schools Television in Britain and in Iran. This was carried out through a case study on mathematics in primary schools in order to understand how to simplify abstract concepts in complicated areas, where ideas are difficult to illustrate.

The results indicate that Schools Television in Britain benefits from the extensive educational backgrounds of programme makers, the work of education advisers, consultants, and close relations between broadcasters and educational authorities across the whole production process. However, the benefit of this history does not generally result in the direct use of any prescriptive pedagogical theory. The schools programmes of the BBC and Channel 4 use textual and televisual techniques that combine entertainment and learning materials in the style of mainstream channels, where the producers try to make the educational contents 'invisible', following the philosophy of 'learning through fun'. In contrast, Schools Television in Iran, through a long history of delivering a curriculum prescribed by the government, tends to be more rigidly influenced by the traditional, monotonic and lecturing styles of the formal classrooms. Therefore, Schools Television is being used generally as a 'container' for instructive content, delivered through 'talking head' sequences.

In conclusion it is proposed that school broadcasting in Britain played a pioneering part in creating a democratic environment in the classroom, where the teaching process changed from a pyramidal into a more horizontal model. It is found that, as long as the educational system in Iran is following a teacher-centred, 'banking' education policy, Schools Television cannot take full advantage of the medium. However, despite significant historical, cultural and political differences, Schools Television in Iran can learn lessons from Britain. This is not preserving a western cultural primacy but understanding and practicing whatever is best for the context of particular educational needs, social and cultural values.

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CONTENTS

Chapter 1

INTRODUCTION

At the beginning of a new millennium, at a time when the digital revolution influences all types of media, a study on television productions for school might be viewed as 'out of fashion'. However, there is important evidence, which suggests that such a study is indeed both timely and important.

First, the population increase in Iran (about 40 million between 1979 and 2007) has given the country one of the youngest citizenships in the world, and made it enormously problematic for the government to support education.[1] For instance, shortages of teachers and schools and an increased demand for equal educational opportunities have forced the Education and Training Ministry to introduce a 'shift system'[2] in primary and secondary schools in some populated areas (Haji, 2005).[3] Statistics show that 14,356,000 Iranian schoolchildren were studying in 137,582 schools in the academic year 2004-2005 (CBIRI[4], 2005: 49). However, there are still 13 million people up to 45 years old in Iran who are excluded from education, among these 3,100,000 who are between the ages

[1] Population of Iran 68,017,860 (July 2005 est.) *The World Factbook*, http://www.odci.gov/cia/publications/factbook/geos/ir.htm# Comm., (25 March 2006).

[2] In the shift system, pupils attend either morning or afternoon sessions for their normal classes. In this way two different groups of pupils at different stages can attend schools daily. In the two-shift system, for instance, primary schools run classes in the morning and in the afternoon with different students. Shift one runs from 8-12 a.m. and shift two from 1-5 p.m. Students are assigned to the morning or afternoon shift—for equal opportunity—per week regularly.

[3] 26% of primary, 50% of lower secondary, and 40% of higher secondary schools in Iran was running under the two-shift system.

[4] Central Bank of Islamic Republic of Iran [*Bank_e Markazi_ye Jomhouri_e Eslami_e Iran*], Economic Research & Policy Department, Public Relations Department. Annual Review, 2004/05, Tehran, Iran.

of eleven and seventeen who have even withdrawn from compulsory education (Iran Emrooz, 2005).[5] Moreover, the geographic size of Iran, which is 1,648,195 square kilometres and the variety of languages, accents and different ethnic backgrounds and cultures[6] present other obstacles for the educational system to overcome (The World Factbook, 2005).[7] For developing countries like Iran, which have limited educational resources and are overwhelmed by problems such as providing adequate classrooms and teachers, television has enormous potential in all spheres of education to help compensate for the shortage of educational opportunities and decrease inequalities, as Palmer (1999) notes,

> Huge numbers of non-literate or marginally literate individuals, for whom formal education has little practical applicability, will live out their lives in print-scarce environments with few or no reading materials in their homes, but with regular access to television. TV and radio, for as far as we can see into the 21st century, will be their most important outside source of lifelong and life wide learning.[8]

In fact, television —with well-planned and structured policy— makes a major contribution to learning in society and can offer high-quality teaching and learning to millions of viewers, teachers and students in schools. Reliability and the power to stimulate are vital assets for television in education at the present, and, in the future. In the digital era, now in progress, there is a promise of even more exciting educational opportunities with the help of interactive television technologies.

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[5] Iran Emrooz, http://www.iran-emrooz.net/index.php?/news/more/4235/, (25 September 2005).
[6] In 2005, the population of Iran consisted of Persians (51%), Azeris (24%), Gilakis and Mazandaranis (8%), Kurds (7%), Arabs (3%), Lurs (2%), Balochs (2%), Turkmen (2%), and others (1%).
[7] *The World Factbook*, http://www.odci.gov/cia/publications/factbook/geos/ir.htm# Comm., (25 September 2005).
[8] http://www.unesco.org/education/educprog/lwf/doc/portflio//opinion7.htm, (30 January 1999).

Even in developed countries like the United Kingdom, both the BBC Education and Channel 4 Learning (which are productively involved in creating new forms of technologies and dealing with the digital era) are still considerably conscious of the value of Schools Television. Within both there is a strong belief that half a century of successful experience in Schools Television, as well as evidence that teachers and pupils have benefited from it in the classroom, should not be replaced with a new generation of technology overnight. As Richmond (2000) notes,

> ...we would be wrong to abandon an existing, familiar technology, whatever its limitations, until we are sure that at least as many people who are at home with the existing technology have physical access to and technical skill in the use of the new technologies.

According to Table 1-1, the most accessible forms of technology in Iran are radio and television, which can reach very large numbers of people and therefore play an important role towards bettering education, as Biabani, Head of IRIB Education Network (2003) describes,

> In a big country like Iran, the procedure of education – in terms of traditional conditions – is time consuming and costly, so due to the rapid growth of communication technologies, we have to move on towards new low costs and faster technologies as well as keeping our traditional values in education. [...now] establishment of television channel and beyond (e.g., computer networks) for educational purposes are economical and necessary.[9]

[9] http://www.irib.ir/amouzesh/default.asp (23 May 2003).

Table 1-1 Radio, Television, Personal Computer, and Internet in UK and Iran

		UK	Iran
Population		60,441,457 (July 2005 est.)	68,017,860 (July 2005 est.)
RADIO	Radio broadcast stations	AM 219 FM 431 Shortwave 3 (1998)	AM 72 FM 5 Shortwave 5 (1998)
	Radios	84,500,000	17,000,000
	(per capita)	1398.05 per 1000 people	249.93 per 1000 people
TELEVISION	Television broadcast stations	228 (plus 3,523 repeaters) (1995)	28 (plus 450 low-power repeaters) (1997)
	Televisions	30,500,000	4,610,000
	(per capita)	504.62 per 1000 people	67.77 per 1000 people
PC	Personal computers	20,190,000 (2000)	4,000,000 (2000)
	(per capita)	334.04 per 1000 people	58.80 per 1000 people 110 per 1000 people
INTERNET	Internet hosts	3,398,708 (2004)	5,269 (2004)
	Internet users	25 million (2002)	4.3 million (2003)

Main Sources: http://www.nationmaster.com/country/ir/med and http://www.odci.gov/cia/publications/factbook/geos/ir.html, (1 April 2006).

Table 1-1 also shows that 4.3 million people in Iran have access to the Internet, but due to the dominant lifestyle pattern[10] in Iran, large numbers of Iranians have access to television programmes. The number of receivers is estimated at 4,610,000. If we take account of the fact that families with television are larger than those, which are without it and if we also take account of the relations that exist between families and between

[10] Living in family groups is still the common lifestyle in Iran. As long as they are not married, and even after marriage, young people live with their parents. Hence, every household hosts a minimum of three to four people.

families and their neighbours, it becomes possible to estimate the total number of people reached by television. In fact, watching television in Iran is still known as a social activity, as Mowlana (1997: 207) points out,

> Unlike the United States and many industrialised countries, where television viewing mainly has become a single person entertainment and social activity, group listening and viewing of broadcasting is a common occurrence in Iran.

For instance, in year 2000 it was revealed that 'watching television has become the most widely consumed cultural commodity in Iran and more than 90 percent of urban families watch television programmes' (*Entekhab*, 23 July 2000, p. 10).

Although there are ICT[11] activities for education in Iran, the most recent figures show that Iran is at the bottom of the rankings for Internet use among 19 Middle East and North African countries. Moreover, this figure reveals that for every 10,000 people only 79 have access to the Internet in Iran (Fars News, 2005).[12] In addition to these problems the number of computers in schools is also crucially inadequate. For instance in 2003 there was only one computer for every 295 students in secondary schools and overall, for both primary and secondary, the average was one computer for 800 to 1000 students (Alaghehmandan, 2003). On the other hand, the price of a television set is comparably more affordable than a computer for users in Iran.[13] Besides, television is still more familiar technology in Iran, and in particular in terms of education can be more easily implemented by teachers and pupils than other kinds of electronic media. In

[11] Information and Communication Technology.
[12] Fars News, http://www.farsnews.com/newstext.php?nn=8409120103, (3 December 2005).
[13] In Iran, the price of a personal computer in 2005 was five times higher than a 24-inch colour television set.

fact, under current circumstances, television is the better choice for supporting both informal and formal educational activities at home or school.

Such evidences encouraged the IRI[14] government to support the idea from IRIB[15] to re-establish educational television in 2002. In fact, the IRIB Education Network (IRIBEN)[16] (*Shabakeh_ye Amoozesh_e Seda va Sima_ye Jomhouri_e Eslami_e Iran*) can be seen as the successor of Educational Radio and Television of Iran (ERTI), which had been under the National Iranian Radio Television (NIRT)[17] in pre-revolutionary Iran, and which was suspended for more than 23 years after the revolution.

The main purpose of IRIBEN is to provide 'equal educational opportunities to all'. It is devoted to work in four major areas:

a) foundational and basic education;[18]
b) public education;
c) higher education, and;
d) vocational education.

With such broad objectives and as a result of immense educational needs (i.e., providing programmes for 15,000,000 schoolchildren) and a great ambition to use television to solve all educational obstacles, IRIBEN has a strong tendency to focus on mass production. In fact, contemporary educational television in Iran is largely similar to that broadcast in the United States during the 1950s as Ide (1974: 330) notes, it used to be "a partial solution to some of education's logistical problems like increasingly large

[14] Islamic Republic of Iran [*Jomhouri_e Eslami_e Iran*].
[15] This is an international abbreviation for Islamic Republic of Iran Broadcasting. But in Iran it is known as Voice and Vision of Islamic Republic of Iran, [*Seda va Sima_ye Jomhouri_e Eslami_e Iran*].
[16] IRIBEN is not a formal abbreviation for the Islamic Republic of Iran Broadcasting Education Network; it is created by the author for brevity.
[17] *Radio Television_e Melli_e Iran*.
[18] Here meaning primary and secondary schools and teacher training.

numbers of student to education [...] and limited human and financial resources". Thus, the issue of the quality of programmes is greatly neglected due to emergency needs, the acceleration of the production processes, and programme provisions.

This research will concentrate on the areas of foundational and basic education in IRIBEN Schools Television, where the policy of mass production is particularly ineffective. This ineffectiveness notwithstanding, however, television's unique capability to add value to the learning processes and produce innovative programming for all ages through formal and informal distribution has to be implemented. This research therefore ultimately aims to explore the practice of various production criteria and raise many related questions about the models of educational television used in the UK and Iran.

1.1 Key Issues

One of the important tasks for any television channel is to decide the structure of its programmes, which have to be related to and support its production policies. Obviously, the central function of Schools Television is to help teachers achieve their educational objectives more effectively; therefore, the structure of any programme should provide a robust link to the educational content. However, programme makers are also challenged to balance a combination of two worlds (education and media) in one place, and to create effective systems of delivery.

For instance, the vital opportunities of face-to-face teaching in the classroom obviously cannot be replaced with Schools Television. However, in return such media

can offer other, previously inaccessible audiovisual sources to teachers and pupils. Hence, in the first step of implementation, such differences have to be recognised by policy makers. Merely imitating a classroom in a television programme will change the nature, characteristics and functions of the media into something that will neither influence learning nor be recognised as entertainment. This will fail to grab pupils' attention and might even disturb the proposed learning process. As Bell (1987: 162) mentions, a teacher may argue that the "use of [television] materials must make the lesson more helpful or attractive for my students; otherwise I should not use them". Or, following Faust (1950, quoted in Ide, 1974: 330), "we need to consider what new possibility exists because of television".[19]

Looking at Schools Television in Iran, it is difficult to identify a proper and balanced structure between education and televisual materials. Here, television productions simply aim at crudely transmitting educational materials to viewers.

On the contrary, we will see in this study that in Britain, educational programmes utilise all the capabilities of television to inspire pupils' imaginations and entertain them to hook and keep their attention. They try to stimulate pupils' interest and encourage them to discover new areas of knowledge.

As mentioned already, the focus of educational programmes in Iran is on 'mass production' and 'mass delivery' rather than quality. In fact, policy makers in Iran assume that the simple presence of a reliable and well-known teacher presenter (many of

[19] In 1950 Clarence H. Faust served as vice-president of the Ford Foundation and President of the Fund for the Advancement of Education (Ide, 1974: 330).

whom are also the textbook authors) can guarantee delivery of valuable televisual materials to pupils nationwide, particularly the remote areas. They mainly provide educational materials directly to audiences in programmes where a teacher talks to the camera, known as a 'talking head'. The capabilities of television, the structure of the production and its effects on learning procedures, only infrequently come into the process of Schools Television in Iran, if they are not entirely disregarded in the first place.

In 2005, the IRI government was spending more than £1,500,000 annually on Schools Television in two institutions like IRIBEN, and Educational Technology Centre (ETC)[20] in order to assist the educational system and pupils. It is essential to understand how production criteria influence educational productions and what effects they have on the learning process; otherwise, the overall policy of having such a channel will fail. For a novice education channel like IRIBEN, as well as ETC, it is extremely important to review and examine models of well-known educational television around the world. This will assist educational television in Iran to flourish and achieve its objectives more reliably and effectively.

For instance, Britain can be an appropriate choice as it was providing two of the most successful Schools Television services globally for half a century. As Moses and Croll (1991: 2) emphasis "it is true to say that Britain has the strongest and highest

[20] [*Daftar_e Technoglogy_e Amoozeshi*], ETC is the audiovisual and multimedia centre of the Ministry of Educational in Iran.

quality Schools Television in the world". Such judgment also confirmed by, Kelley (1998: 5), he notes that,

> The comparison with the production from other countries is particularly telling, with the quantity and quality of provision within UK, giving it the reputation of 'the best school television *in the world'*

In addition to this tradition of excellence, as English is the international lingua franca, television programmes from Britain have a substantial advantage over television production companies in the non-English-speaking world. Television programmes from Britain in various areas, particularly documentaries and education, are very well known in Iran and have a great reputation in both content and production structure. Therefore, this study has analysed two models of Schools Television in Britain.

To do this, we must first review the historical background of Schools Television in Britain and Iran in order to understand in depth their capabilities and obstacles. This will assist in the creation of a basic framework for establishing a compatible model of production structure of Schools Television in Britain for Iran. As education has to be embedded in the televisual materials, it is also essential to examine and comprehend the functions of various learning theories, which can be implemented by Schools Television. Thus, to reveal the details of production criteria in relation to learning theories and production criteria, two samples of school programmes in Britain and Iran were analysed in detail. Through this study, the obstacles to IRIBEN and ETC were revealed and used as a basis for further discussion. Towards this end, the thesis is organised into eight chapters, as follows.

Chapter 2 provides an overview of the relationship between pedagogy, context and culture, the pedagogical impact of television upon teaching and learning strategies. It also focuses on reflection upon the relation between pedagogical effectiveness and the professional quality of a televisual product. This chapter will discuss the strengths and weakness of Schools Televisions production models and their techniques. And eventually it will review the relation between the production of pedagogical television and other televisual and media-based products.

Chapter 3 lays the groundwork for the entire study and examines the relationship between theories of learning and televisual practices. Two sets of theories in learning and features of educational television are reviewed. The first includes a theory by MacMahon (1997), who adopted four learning ideologies – transfer, shaping, travelling, and growing – to make a bridge between television and learning theory. It also includes with a consideration of the 'condition of learning' through the principles of instructional design by Robert Gagné (1916-2002), which was selected to analyse samples of Schools Television in Britain and Iran in relation to learning theories. The second set of theories discusses a) the effects of various features of television on education in different genres such as narrative, dramatisation, and non-fiction; the structure of edutainment and the role of humour, and b) the influence of production factors such as sound, image and editing on education.

Chapter 4 presents the research design and the rationale for the methodology of multiple case-study and historical research, which comprise the main methods for this study. It also discusses the difficulties and processes of data collection, as well as how

instruments such as printed materials, interviews, questionnaires, and participant observation were used as major sources of evidence.

Chapters 5 and 6 present a brief history of educational broadcasting in the United Kingdom and Iran. These reviews provide fundamental information about the establishment and creation of school broadcasting in each institution and clarify the important events, which created advantages and/or disadvantages in different values. The brief review of educational broadcasting in Iran is divided into two major periods, pre- and post-revolutionary Iran, in order to familiarise the reader with the subject matter in different eras. Also, the review of Schools Television in Britain concentrates on major events in both BBC Education and independent television channels. Overall, these studies form the background of Schools Television in the UK and Iran create a basis for further discussion about specific subject maters.

Chapter 7 analyses two cases of Schools Television in the UK and Iran in order to develop the argument and examine the production capabilities in both institutions. In addition, and to assess the relevancy of educational materials and models of learning theory, Gagné's 'nine events of instruction' have been implemented and applied to the sample programmes. These revealed the advantages and disadvantages of educational production quality in the UK and Iran, and assisted in establishing compatible models for the production of effective educational television in Iran.

Chapter 8 presents a discussion of the obstacles to Iranian media culture in relation to the renovation of a long-term oral and traditional communication culture into the modern era of mass media. It is argued that educational programmes in Iran were

influenced negatively as a result of this history. Various structures of Schools Television in the United Kingdom and Iran – administration and finance, production, distribution and support, and feedback – are reviewed in comparison. This leads to a discussion of how the production criteria of Schools Television in Britain would be feasible and compatible for the IRIB Education Network.

Chapter 9 presents conclusion about the compatible production criteria and models of Schools Television in the United Kingdom and how they might enhance the quality of Schools Television in Iran. To do this, the central questions of the study on issues like, implementation of learning theory, television production criteria for educational purposes, compatible production criteria and models, are concerned and concluded. In addition the feasibility of the hypothesis and some recommendations based on findings of this investigation are also reviewed. Finally, this chapter offers some suggestions for further research.

Chapter 2

TELEVISION AND PEDAGOGY

2.1 Introduction

When the Iranian Radio and Television agreed to support and fund my postgraduate training in educational television production, and more specifically Schools Television, my background experiences made this seem a logical proposition: they would send a professional television lecturer and educational programme maker to England to learn from the spectacular success of two British School Television projects (BBC and ITV/Channel 4). However, after several years of research into various types of educational programmes and participation in producing programmes for British schools, it emerged that the question of how to measure 'progress' in both British and Iranian broadcasting media is far from simple. For those who would seek to make Iranian schools television more 'like' its Western equivalent, with similar production values, visual styles and pedagogical methods, it is important to understand the significant differences between Iranian and Western cultural context in relation to education and television productions cultures. In every society, television programmes are based on production values that are situated in complex contexts of political and ideological histories. Problems that might initially appear to be simple matters of funding and resources are therefore often complex matters of values, desires, ideals, and knowledge, as well as technical 'expertise' and economic infrastructure. The complex

relationship between the different levels of a society's structures has been the subject of extensive investigation by those who would seek to understand the potential and the limitations of education. Is education to be considered, as Louis Althusser suggests, part of state control of a national constituency? Is education a natural progress from childhood to maturity as more liberal and humanist theorists would have it? Is teaching a technique that can be taught, and ameliorated through advances in technology and technique? Has the rapid development of new technologies of mass communication been fully explored for the potential that these may offer educationalists? Does broadcast television have especial potential in a culture that is striving for mass literacy and numeracy, such as is Iran's culture? It is in order to explore such questions that we turn to the concepts of ideology, hegemony, and culture.

This chapter lays a foundation for later explorations of such problems by providing a reflective overview of the relationship between pedagogy, context and culture; the pedagogical impact of television upon teaching and learning strategies; reflection upon the relation between pedagogical effectiveness and the professional or polished quality of a televisual product; and the strengths and weakness of Schools Televisions production models and their techniques. Finally, it will review the relation between the production of pedagogical television and the production of other televisual or media-based products.

2.2 Pedagogy, context and culture

Before the thesis opens we start with a discussion about how Schools Television production in Britain might inform production in an Iranian context, it is necessary to have a background understanding of tradition and modernisation in Iran during the last century. This will enable recognition of potential obstacles to bringing elements from western countries into a society in which traditional and religious values are heavily embedded into culture and politics. This is particularly important in the recent context of Iran as an Islamic republic.

Historically, the structure of Iranian culture has been influenced in three ways: the civilisation and culture of ancient Iran, Islamic culture and western cultural civilisation. In the last century, many major political and intellectual tendencies in Iran have been shaped by the tensions between these sources of influence, particularly between Islamic and modern civilisations.

One important product of modernisation is the establishment of forms of government that are characterised by rationalism, the separation of government from religion, constitutional law, social conventions, public interests, and civil society. Such was initiated in Iran on a small scale by the kings of the Ghajar dynasty, who enthusiastically bought western technologies (e.g., cinematography materials in 1900s) as a personal hobby. In broader terms, however, Reza Shah (the first king of the Pahlavi dynasty who was influenced by Kemal Ataturk in Turkey) was the pioneer of westernisation in Iran. He established a strong central government, which encouraged secular nationalism in line with western models of modernism. However, as Alamdari

(2007) puts it, 'Reza Shah made some administrational and educational modernisations, but the main aspects of modernity like political and mental preparation were ignored'. This is illustrated by Mohsenian Rad (2006: 11), who argues that 'in the last years of [Reza Shah's] government he established a radio transmitter as a national media, which was able to facilitate the uniformity of the society'. This was in fact a part of strong belief that the mere importation of western technologies would be equal with modernisation and 'civilisation'. Later, his son Mohammad Reza Shah continued these policies with the help of western countries and oil revenue during his thirty-five years of rule.

Western technologies hence flooded the country, but there was little planning for any kind of adaptation. By ignoring traditional Islamic believers, the Pahlavi regime established a strategic relationship with the western world, continued its reforms and demonstrated spectacular results in socio-economic improvement. However, because this was accomplished without popular participation or political freedom, it alienated traditional groups within society and created a rupture between the government and the people. This destabilised the government and eventually toppled 2500 years of monarchy in Iran.

Under the post-revolutionary Islamic Republic, however, traditional groups took power and directed the country towards an old structure of authority, in which modern groups have become alien to socio-political and cultural issues. This created various structural obstacles to economic and political development. The government of the Islamic Republic of Iran is based on a form of rule based on Vilayate Faqih

(guardianship of the jurist) and legitimated through Islamic law. During the Pahlavi era, religion had been constitutionally detached from the government in order to modernise the governmental system and society. In 1979, however, the Islamic monopolised political power, eliminated the monarchy and established a republican system that is intertwined with, rather than separate from, religion. The system is therefore neither like a patrimonial monarchy, nor like a secular republic.

While new technologies were welcomed by intellectuals and the young under both regimes, the obstacle of compromising different cultural values between east and west remained problematic. Alamdari explains this in the following way:

> Modernity is not merely importing technologies and building post-modern skyscrapers as we can see in contemporary Iran and some Arab states in south of the Persian Gulf. Modernity is also based on modern culture, attitude, system and thought, which legitimate the human rights equally. [...] We have to fill the gap between the structural and conceptual dimensions of modernity in order to move Iran from a traditional to a modern society. [On the other hand] traditional supporters in Iran recognise modernity as westernisation (which encourages irreligion). Therefore, they are able to instigate common people against it.

As a result, new technologies in Iran were employed in traditional ways. For instance, as Mohsenian Rad notes, due to the lack of experience within Islamic media and the influence of long-term traditional education, in the early days of the revolution the Islamic regime used the radio as a pulpit, and television as radio. In fact, the tradition of lecturing and transmitting knowledge in a more traditional 'Maktab style'[1] penetrated deeply into Iranian media culture.

[1] Maktab was historically a basic form of mass education in Iran and certain other Muslim countries.

2.2.1 Ideology and Hegemony

Antonio Gramsci believed that social civil institutions like schools, churches, family, parties, and the mass media were the main sources of reproducing culture, and that without their influence it would be impossible to strengthen political power. He argued that a government may use cultural or ideological strength to achieve forcible power and stabilise its position, or to establish overall hegemony. The concept of ideology might seem unnecessarily complicated to those who would like education to be a simple matter of the transmission of knowledge and facts from one generation to another. However, it is important to understand that in societies suffering from a lack of democracy and freedom of speech, the policy of 'transmitting knowledge' for education has important functions. Here, education is not merely a function of transmitting knowledge and facts, but is also used as a tool for disseminating political ideas or propaganda.

In pre- and post-revolutionary Iran, education was always central to government and viewed as a political tool for either consolidating the status quo or as a powerful device for social change. In addition, religious tradition and education have historically been linked in varying degrees in Iran. Classical education was not oriented towards enhancing the national economy, ensuring individual employment, or helping people to become wealthy. It was rather rooted in the tradition of *Maktab*, where pupils memorised religious texts such as the Koran without necessarily learning to understand them. In Iran, the traditions of lecturing, transmitting knowledge, and memorisation

remain influential throughout the educational system. Hence, while the establishment of modern schooling in Iran in the early twentieth century separated education from religious training, classical attitudes and rote learning were present throughout the educational system.

The 1979 Islamic revolution re-established a new era of classical education in Iran, which is strongly connected to Islamic belief and faith. Throughout Iran's history, many clerics were opposed to European styles of schooling. Apart from losing power and authority, they criticised new schools as not being the product of the historical transformation of traditional and religious schooling. Under the Shah, education was an instrument for Westernisation and a model of modernising Iran; it was also a tool to expand monarchy throughout the country. In post-revolutionary Iran, however, educational reform has been mainly focussed on politicising and Islamising education and eliminating cultural Westernisation. Therefore, 'western' values became symbolic of capitalism and imperialism, as Ayatollah Khomeini (1982:75) emphasised in the early days of the Islamic Republic.

> One of the most important issues in all organisations, especially universities and schools, is fundamental changes to the curriculum, in order to free our cultural values from westernised and colonial education.

This ideology was formed in the early days of the Islamic regime in order to defend the country against conflicts from different opposition groups, the Iraqi regime and the long-term war, and more importantly the ongoing political clashes between Iran and the United States of America. Therefore, the new government believed that

educating the new generation in the values of Islam would strengthen the nation and protect it from the revolution's enemies. In fact, as Mohsenian Rad notes, 'the Islamic revolution, in contrast to the other important revolutions of recent centuries, tried more to change the cultural system of the society than to change the economic system (2006: 12). After 1979, therefore, textbooks in a range of subjects (for example, Farsi, literature, humanities, sociology, history, theology and civil studies) were scrutinised and revised. Educational authorities were particularly keen to increase religious studies, such as learning the Koran and Arabic language, as part of the Islamisation of the education system.

Additionally, in both Pahlavi and the Islamic Republic, teaching and learning policies faced similar obstacles as in other developing countries, as Levers (2006: 172) points out:

> [balancing the] economic and social needs of the country versus the economic and social aspirations of the young in overcrowded classrooms; lack of empathy between teacher and pupil; absence of an analytical approach to learning; lack of academic freedom, being subject to shifting government policies; quantity versus quality, especially at university level; insufficient salaries, leading to low teacher morale, and, in the face of high inflation, to teachers holding several teaching positions, allowing little time for preparation and research, especially at the university level.

Moreover, under both regimes, the content of curriculum replicated official government ideologies in order to sustain the status quo. This may be understood in the context of Iran's political history, which was characterised by a tradition of dictatorial authoritarianism. As Lajevardi (1993: 128) writes,

> this phenomenon can be traced in the educational systems of the past and present, and is reflected in the rigidity of the educational system, the 'directive' tone of the textbooks and the lack of critical approach in the teaching method even after the Islamic government, whose major goal related to education and literacy programmes is to hold and maintain 'control' of the population by means of textbooks and other media.

Accordingly, the 'directive' tone used by the government to address the people through various media was also found in the educational system. As the main aim of education was to generate a new Islamic person whose ideals and philosophies were in harmony with the ideology of the ruling government, the teacher had ultimate control in the classroom, and delivered a prescribed national curriculum to students by 'transmitting knowledge'.

Admittedly, many British educators criticise the British school system as being highly didactic and grades oriented.[2] However, British teaching styles still mange to be student-centred, as will be argued later. In contrast, in Iran due to the high volume of curricular content, teachers in Iran have infrequent opportunities for practical work and there is little space for critical thinking. In this model, it might be argued that the underlying philosophy is that the teacher talks and students listen; the teacher 'knows' and students do not. Teachers narrate prescribed information and pupils then must mechanically receive, memorise and repeat it. From a critical perspective, however, these beliefs are obstacles to freedom of education. Paulo Freire (1970: 52) described this model as 'banking education', which isolates learners from both the content and process of education. As a result, making connections and links between different pieces

[2] Dr. Sarah Amsler, Senior Lecturer in Sociology, Kingston University (author's personal correspondence via email received 10 March 2008).

of information, and any rhetorical capacity come from students' own ambitions, efforts, and instincts rather than from the formal educational process.

The long-term hegemony of the monotonic nature of Iranian governments in different eras and the influence of ultimate authority lead to a lack of communication between teachers and students. Friere, however, identifies communication as a crucial element in liberating education:

> Through dialogue, the teacher-of-the-students and the student-of-the-teacher cease to exist and a new term emerges: teacher-student with students-teachers. The teacher is no longer merely the-one-who-teaches, but one who is himself taught in dialogue with the students, who in turn while being taught also teach. They become jointly responsible for a process in which all grow (1970: 80).

In other words, as long as the educational system in Iran works primarily to transfer information that is prescribed by the national curriculum to learners unilaterally, it will, as Freire argues, reinforce hierarchical inequities between providers of information and recipients. Therefore, classroom teachers who are compelled to implement such methods may create feelings of powerlessness in their students and by extension strengthen their passivity. This, as Gramsci would argue, is one of the most important sources of legitimacy for hegemonic state power (See Robinson 2005).

2.2.2 Pedagogy and Society

A more critical approach to education, however, suggests that the ultimate objective of learning is to contribute to society. Freire therefore argues that an educational system must have faith in the knowledge of the learner as well. Teachers and

students should share the ideas through 'dialogical relations' (1979:60) and engage in 'problem-posing education' that counteracts traditional understandings that education is about delivering facts. This model dramatically changes the pyramidal structure of the teaching process, where teachers have ultimate authority, into a more horizontal model. In the latter model, the teacher is considered *one* educational medium who helps, shares, teaches, and learns from students as part of a collective problem-solving process. Here, the teacher is not seen as the only knowledgeable person and pupils are not regarded as passive objects whose role it is to merely memorise and absorb information; they are no longer recognised as empty vessels waiting to be filled. They bring knowledge from their own communities into the classroom. The teacher should hence be able to employ this knowledge, learn from it and harness it to enhance the students' education. In this way, educators prepare new generations within the society with relevant knowledge and experience for dealing creatively with new social, economic and political challenges. Giroux (1997: 143), for example, believes that

> schools need to be reconceived and reconstituted as democratic counter-public spheres, as places where students learn the skills and knowledge needed to live in and fight for a viable democratic society. Within this perspective, schools will have to be characterized by a pedagogy that demonstrates its commitment to engaging the views and problems that deeply concern students in their everyday lives. Equally important is the need for schools to cultivate a spirit of critique and respect for human dignity that will be capable of linking personal and social issues around the pedagogical project of helping students become active citizens.

In other words, students learn not by being taught transmitted information, but by establishing connections between this knowledge and their own experiences. In fact,

pupils recreate and personalise the learning materials themselves. As such, they actively participate in the actual process of learning, and are not therefore constrained to write whatever teachers or the educational system on the whole demand.

Due to the strong tradition of educational centralisation in Iran, however, this approach to schooling has not been taken up. Education has rather been viewed as a political means for establishing national unity and identity. The government also has an extremely strong presence in education, retaining control over financing, curriculum policies, publishing and distributing textbooks, and the training and employment of teachers. All of this gives it formidable powers of control within the educational system. Consequently, education in Iran is organised in a highly bureaucratic way, and key social bodies such as teachers, pupils and parents can make no effective contributions towards or have meaningful influence on educational process. Therefore, decisions and policies are commanded from 'governmental authorities', resulting in a lack of dialogical culture and relations, consultations, or contributions from other actors in the educational system.

Within the curriculum itself, constant attention to themes of politics and religion works to influence students' attitudes, as well as the boundaries of their personal action and cogitation. It also pursues this goal through an 'encyclopaedic' philosophy of education, where instead of engaging in meaningful 'problem-posing' activities, students are expected to learn large amounts of information at relatively superficial levels.

For example, 'citizenship' is defined in the context of broader social commitments such as family, county, town and nation – all within a religious society. Generally, in

Iranian school textbooks, the main focus is the necessity of group unity, and dependency and harmony are defined as dominant values. Anything that is seen to cause disunion, detachment, and multiplicity is therefore devalued and regarded as dissonant. Individualism is equated with selfishness or egotism. Neither the multiplicity of theoretical or practical issues, nor the individuality of citizens are considered valuable. As a result, most textbooks underline the importance of obedience and respect for social 'leadership' in order to achieve the state's religio-political objectives. In fact, as Bahonar (1985: 99) emphasises, schooling in Iran can be regarded as a human manufacturing factory (*Karkhaneh_ye adam sazi*) that provides a hegemonic model of 'good Muslim people' that is monitored through obligation. However, this restrictive and compulsory method for achieving specific outcomes, known as 'products of the educational system', normally disappoints educational policy makers in practice. For instance, this type of theory, even within a long-term tradition such as Marxism, was unproductive. As Giroux (1997:72) mentions,

> Marxist thought, with few exceptions, has failed to develop a systematic treatment of the concept; consequently, the concept of ideology [...] has not played a role consistent with its potential in radical theory and practice.

Another characteristic of the school curriculum in Iran is that it is based on an encyclopaedia model, in which pupils are required to acquire large amounts of content based on abstract standards of scientific knowledge. Learning methods, therefore, are reduced to the transmission and memorisation of large quantities of textbook material. Because the educational system prioritises outcomes over the process of learning,

learning objectives tend to be content-based rather than skills-based (Fardanesh, 2007).[3] The assessment of learning therefore relies heavily on grades. Passing the difficult university entrance examination has in fact become the ultimate objective of many schools, teachers, pupils and parents, and has eclipsed other educational goals and ambitions. Therefore, while only ten per cent of university applicants are able to study in Iranian universities, the stress of failing the examination is disproportionately affecting the entire educational careers of young people from the earliest stages of study in Iran. However, such grades merely show the students' level of success in 'banking-style' education at the time of examination, and do not indicate that they can apply the knowledge to either improvement or practice. Unfortunately, even at the university level the attitude towards studying and assessment follows the same model. The popular use of concepts such as 'illiterate diploma'[4] and the public belief that finishing universities educate 'unskilled'[5] people stem from a history of problematic education in Iran.

2.3 Pros and Cons of British vs. Iranian Education

In contrast to the conditions of education in Iran, the utilitarian system of education in Britain provides for various styles of learning and prepares children to earn a good living and contribute to the wider society. In fact, the didactic and teacher-centred educational philosophy and tradition in Britain were replaced with more pupil-centred approaches in the 1920s. Therefore, teaching based on activities and experience instead

[3] Dr. Hashem Fardanesh, Associate Professor, Department of Education, School of Humanities, Tarbiat Modarres University, interviewed by the author, 20 February 2007, Tehran-Iran.

[4] The Diploma in Iran is equivalent to the GCSE in the UK. The phrase refers to people who have certificates but no practical knowledge about how to use them.

[5] This mainly refers to severe lack of practical knowledge.

of knowledge to be obtained and facts to be accumulated was hugely encouraged by policy makers. In subsequent decades, learning was regarded by educationalists and teachers as a process of implementing intellectual skills and moral understanding, rather than as a didactic process.

As a result of such educational policies, many western educationalists proclaim that liberal education, in terms of that which liberates the person from ignorance and prejudice, is being practiced. However, even here there is a tendency towards indoctrination, either through direct teaching or through the 'hidden curriculum'. Iran's religio-political agenda is not in this sense exceptional. In addition, where this plays out in secular terms, British education may be oriented towards producing rationalised 'specialists', rather than critical thinkers, as Trevathan (2007) notes:

> mass culture, produces or indoctrinates young people into being consumers in all sort of other things. What has happened to education generally...rationality has become the prime means of thinking and being.

He further argues that 'in western countries education is closer to slave class, where they learn merely how to make, produce, and manufacture things, but without sprit or vision'. Indeed, with increased interest in vocational courses, education in Britain is increasingly viewed as a means of supplying the job market with workers. Apple (1996: 99) criticises the tendency of 'making the needs of business and industry into the goals of education' at the expense of attention to moral crises within Western countries.

However, in contrast to education in Iran, state schools in Britain are, within the framework of the National Curriculum, free to plan and organise teaching and learning in ways that best meet the needs of their pupils. The National Curriculum does not apply to independent schools, which by definition are free to set their own curriculum, but it ensures that state schools in all Local Education Authorities share a common curriculum. The Education Secretary's role, therefore, does not involve enforcing schemes of work, but is rather oriented towards more strategic work and discussion. Both government and independent organisations are responsible for developing schemes of work, resources and training for schools.

Moreover, critical thinking is encouraged and activities for a variety of learning styles and abilities are used. Following Koumi (2008), 'due to a philosophical evolution from instructivism towards constructivism, teacher-led lessons are minimised and replaced with personalised learning where pupils take a more active role in learning'. Admittedly, at lower levels, pupils are required to memorise definitions and facts. At advanced levels, however, pupils are required to apply their knowledge and skills, often attempting to identify the most efficient way of solving a problem and highlighting limitations.

In such circumstances, teachers are regarded as facilitators and responsible for developing an environment where learning can thrive. Hence, in contrast to Iran, in British schooling the emphasis is placed on skills rather than memorising large amounts of information. Therefore, technology is taught not only in discrete subjects such as 'ICT', but its use is also encouraged and developed across the curriculum. Non-

technology subjects are required to utilise technology to enhance both teaching and learning; therefore, implementing radio and television for education since 1920 – ironically, the period of pupil-centred policy – and other contemporary technologies played a substantial role in Britain's educational system. However, more traditional aims of education such as the aim to educate people as democratic citizens and the desire to have a literate and numerate workforce that can respond to economic demands have also remained influential in British education.

The above comparison reveals significant differences between the history, philosophy and organisation of Iranian and British educational systems. It suggests that a study on Schools Television in Britain as a model for Iran is incredibly complicated. It is therefore right to ask how Schools Television can work in Iran, and how the experience of British Schools Television might be beneficial to this project. This is even further complicated by an internal contradiction, which is that while the Islamic Republic of Iran would like to breed a new Islamic generation through a classical education which is often associated with indoctrination, on the other hand, it has to implement new technologies to train and prepare students for life in contemporary modern society. Compromise with western approaches and technologies thus seems both fraught and inevitable.

However, this thesis does not regard the British model of Schools Television as the preserve of either a particular educational system or culture. Rather, it explores it to inform the creation of a new television production strategy for use in Iran. In fact, work in both BBC Schools and Channel 4 Learning has provided successful examples of how

the experiences of schools programming in other cultures might assist IRIBEN in extending its production values, understanding various aspects of television grammar, and increasing knowledge about the characteristics of different types of school programming. Ultimately, any model of educational television must consider the best of competing models and understand how they might be practiced in the context of particular domestic issues, needs, and cultural values.

2.4 Pedagogical impact of television on teaching and learning

Despite the moral panic about the deleterious effects of television on children's concentration and intellectual acuity that surrounded the emergence of television as a medium of popular culture and new domestic appliance in Britain in the 1950s, there is now widespread acceptance of the technology. In fact, even tainted with all the negative qualities that the Frankfurt School attributed to the mass media[6], the use of television by the Open University and the rise of British schools broadcasting in the 1950s fundamentally changed the way that broadcast media were added to film and documentary genres to accomplish Reith's goals 'to inform, educate, and entertain'.[7]

In fact, the predominance of the 'teacher's voice' as the main source of knowledge, accompanied by textual materials, was dramatically modified by BBC school radio broadcasting in the 1920s. In the 1950s, television screens were brought into classrooms, along with blackboards and print materials, and remained there for almost five decades.

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[6]Frankfurt School critical theorists claimed that contemporary societies are 'mass societies'. By this they meant that social community has been lost with the rise of mass communications, and that the media has thus become worthless.

[7] These are well-known objectives of media, introduced by Lord John Reith, founder of the BBC.

This changed pedagogical strategies and further decreased the monopoly of teachers' authority in the classroom. As Ashton (2007) emphasises,

> I think the impact...was principally for the teacher to become more modest, not to say everything but to realise that there are other experts you can bring into the classroom in a TV programme. [...] I think it made the teacher admit into the classroom the reality is an outside world and it represents a challenge of pedagogy actually because they put the teachers slightly to one side of being in control.[8]

The intensive use of television materials for children's entertainment and schools broadcasting initiated a transformation of pedagogical techniques so that television monitors were ubiquitous in classrooms by the 1970s and 1980s. Wheeled in with either a U-Matic or a VHS video tape player, schools broadcast materials became familiar in the classroom as a user-friendly technology. Added to this familiarity was an aura of technological progress that television seemed to encapsulate. Television connoted the future, youthfulness, a universal visual language that rivalled the monoculturalism of books and print media. The moving image seemed to rival life itself in its dynamism. Studio production values cast educators as youthful and photogenic models of middle class integrity. Studio sets rivalled schoolroom interiors with their colourful and well equipped *mise en scène*. Soon special effects such as dissolve, wipes, animated sequences and graphics were edited into the talking heads and dancing presenters, to provide a level of energetic performance that was almost theatrical and musical in effect. However, these were not necessarily all challenging the traditional teaching methods, as

[8] Paul Ashton, Joint Head of Programmes at Teachers TV, interviewed by the author, 19 June 2007, London-UK.

Ashton notes: 'television made the teachers more humble but more effective because they could bring in the wider range of things'.[9]

While other new technologies have made important contributions to education, children have a natural inclination towards watching television (Moss et al. 1991). Because of this, television has real potential as a powerful learning source. Ashton emphasises that 'television has enormous narrative power for pupils in schools, and such distinguished provision has to be seriously considered alongside the equally valid interactive resources'.[10] Following Van Evra (2004: 229),

> children's use of technology has expanded rapidly with the proliferation of cell phones, pagers, music videos, video games, DVDs, and other digital devices, but television still retains its prominent spot in the media world.

Some studies criticise the passivity of television viewers, while others argue that students regard television as a 'break from work' rather than an integral part of teaching (Sanders and Sonnad, 1982; Celsing et al., 1985; Salminen et al., 1988; Bell, 1987). However, there is evidence to suggest that television can assist teachers in various ways, particularly in inaccessible subject areas. Adams (1990) argues that television is not a passive entertainment device and in fact helps children's mental capacities to grow. As Forsslund (1992) points out, however, it depends on how we use the television for education. Following Meyer (1993), school television can be implemented as a resource and can develop children's understanding by putting the curriculum into wider contexts

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[9] Ibid

[10] Paul Ashton, Joint Head of Programmes at Teachers TV, (author's personal correspondence via email received 27 November 2007).

and showing its relevance to the real world. A television programme can be most effective when it exploits the advantages of the medium in a given context, and it can achieve a range of objectives for learning purposes (Bates, 1980).

However, good television (meaning using high-standard technology) cannot independently provide reliable educational television. There should also be a balance between the techniques and educational content of television programming. Bates (1981) believes that television has the capacity to combine a wide variety of representational modes, which makes it a rich medium for education. Following Mason (2008),

> whilst it varies from subject to subject, television is often ideal to set up a concept within a subject, to inspire children to think, for instance, mathematically, or geographically. The narrative drive of the programme, the context and setting for the story, then creates an impressive and engaging experience. Often the actual teaching is best done by the teacher with television used to inspire, consolidate, and reinforce the learning that will take place, or has taken place, in class.[11]

The Qualifications and Curriculum Authority (QCA) (2000) has also outlined the benefits of using television in schools and emphasises that it can provide various audiovisual materials that it would be otherwise be difficult or impossible for students to see in their classroom. For instance, television can assist pupils in making their ideas concrete, learning about the past, and motivating them to learn more effectively. It may also help children develop their critical faculties and stimulate their imaginations. It exposes pupils to a broad range of aesthetic experiences and teaches them about beliefs

[11] Kristin Mason, Audiovisual Learning Executive, BBC Learning (author's personal correspondence via email received 15 February 2008).

and values through real or fictitious stories or situations. Finally, television provides opportunities to hear others talk about their thoughts and feelings.

Following Wetzel et al. (1994), televisual production techniques are particularly useful for capturing, holding, and focussing a viewer's attention. They also bring words, sound, and pictures to a viewer simultaneously, showing movement, presenting realistic visual images, and creating believable visual illusions. Following Mason (2008),

> educational content made specifically for television can provide inspirational, thought-provoking resources for teachers to use in a classroom. It is crafted in the expectation that a teacher will mediate the content and steer structured discussion through effective questioning. In this context, the teacher is gatekeeper; if they don't press 'play' the programme can be the best in the world but it won't reach its ultimately intended audience.[12]

Further, following Kelley (1998:58),

> television can operate as a leading force in promoting access to the information society, supporting learning in home, school, and work, and blurring the divide between statutory education (schools' television) and general learning.

It has to be mentioned however, that whatever technologies are implemented, positive effects on users can be achieved only if there is a strong relation between content and context, and the product itself has to be well-designed (Rauterberg, 2004: 56). Following Fisch (2002: 29),

> we have a long way to go before the effects of educational television will be understood completely. However, even as we strive toward a distant goal of understanding effects, we must not lose sight of a more immediate point: Effective educational television programs already exist.

[12] Kristin Mason, Audiovisual Learning Executive, BBC Learning (author's personal correspondence via email received 12 February 2008).

The pedagogical impact of television on the processes of teaching and learning, and the resulting changes in educational policy, technologies, and approaches, have been considerably discussed since the 1920s. However, it is no longer a question of whether we learn from television, but rather how, when, where, and under which circumstances we can use it as an effective learning medium.

2.5 Pedagogical effectiveness and professional quality of television

Given the above description of British educational television, what recommendations can be derived for Iran? Since television became widely available more than half a century ago, the medium has developed to play a major role in various areas besides education. As has already been discussed, television has had considerable pedagogical impact on teaching and learning. However, while this was mainly true for industrial countries in the early history of television, other countries have also begun to follow this trend. In Britain, as will be discussed in chapter 5 of this study, even before the advent of television the BBC had 33 years of very successful experience in schools radio, where producers experimented with various production styles in different fields to achieve quality programmes for better education. In developing countries like Iran, due to a lack of resources and limited experience of establishing quality television production, including educational research and broadcasting, this has been and remains a major challenge. Therefore, the question of how to achieve high professional quality of television in conjunction with pedagogical effectiveness remains a core question, and

constitutes the main problem of this study. In order to understand it, we turn to history once again.

As mentioned earlier in this chapter, the Iranian government has acknowledged some value in modernisation, and this has presented certain challenge for the political project to re-establish Islamic values in the context of a modern society. The media in general, and television particularly, has been an important part of this. The Iranian government re-established an educational television network in 2003, and since 2000 have invested heavily in ICT in order to modernise the educational system. However, its main educational policies remain largely the same, as Fardanesh (2007) notes,

> IRIBEN simply imitate the mainstream policies of the educational system in Iran, which encourages pupils to memorise subject matter. This, specifically for primary schoolchildren, could totally ruin their attitude toward learning. In fact, the main objective of schooling in Iran has unfortunately been strongly tied up with the general university entrance examination, in which from the early years of education, teachers are preparing pupils for this big exam. Accordingly, Schools Television in Iran is not exceptional, and is implemented as a strong apparatus toward the same...objective.[13]

The IRI government introduced educational television as an alternative form of schooling for pupils who have no access to either good teachers or other reliable educational materials – in other words, for deprived pupils living in remote areas. However, as Lemish (2007:147) emphasises, 'the two [television and schooling] are fundamentally distinct: aside from the differences in their content preferences, they represent dissimilar technologies and, indeed, two different cultures'. Hence, in order to

[13] Ibid 3.

have 'good schools television', it is necessary to understand each field thoroughly and to establish common ground between them. Lemish (2007: 148-9) argues,

> the fact that the two systems emphasize different forms of expression requires that children apply different cognitive skills in their engagement with the text: dominance of the verbal in the school culture and dominance of the visual in the television culture.

Merely providing educational audiovisual materials for viewers without attention to the specific functions of the media therefore undermines its ultimate purposes. Following Lemish again (2007: 167),

> early educational television programs in the 1950s and 1960s were characterized by 'talking heads': a television teacher, usually assisted by simple teaching aids such as a blackboard and still pictures, talked directly to the camera, i.e., to the target audience of pupils. Production was simple, non-creative, and rarely realized the potential of the medium.

Each media provides a unique function for its audience within a particular environment; therefore, as IRIBEN mainly broadcasts to students at home, it is necessary to clarify the differences between a traditional classroom and teaching through an electronic media like television. Following Mason (2008),

> [...] there is a difference between programmes made intending that a teacher will mediate their content with a class, and programmes made for children and young people, with the expectation that they will be watched without this support. Well-produced drama reconstructions can illustrate a situation, bring to life a confrontation that would be dry just to read about, and stimulate a discussion; whether in a formal classroom context or not.

The fact is that Schools Television programmes are rarely watched at home as they are considered less entertaining than fictional programmes. A study by Van Lil (1989)

shows that less than three per cent of children named an educational programme as their favourite. Similarly, an online programme survey conducted by Iranian television in September 2003 revealed that a mere 0.98% of viewers chose to watch the educational channel (see chapter 8 page 329). This is unsurprising, for as Schroeder (2000) argues,

> it is often seen as particularly difficult to merge entertainment and education in children's programming, as children are assumed to be highly resistant to viewing educational programming in their leisure time.

This is not often considered in Iran, for regardless of a programme's content and type, a normally monotonic teaching style is predominant and well received by students (Yaghma, 2007).[14] Mohsenian Rad (2003) criticises the broadcasting policy of this channel and notes that it

> is wrong if we broadcast an educational programme and expect pupils to leave other channels and select an educational one. When children are enjoying their leisure time it is difficult to meet their educational enquiry. At the moment, it seems that IRIB want to have merely an educational channel, while there is a lack of proper adaptation to the values of television for educational purposes.

This poses a serious threat to IRIBEN broadcasting policies. Following Von Feilitzen (1976 quoted in Nikken and Van Der Voort 1997: 183), children (at home) would like to watch fictional programmes in the first place to amuse themselves. Therefore, their programmes have to be funny, relaxing, and captivating (Nikken and Der Voort, 1997: 184). Mason emphasises that

[14] Dr. Adel Yaghma, Editor-in-Chief, Educational Technology Magazine (ROSHD), interviewed by the author, 17 February 2007, Tehran-Iran.

> it is difficult to separate the talking-head style of presentation from what teachers would do anyway in their own class. Whilst it is obviously good to have an expert contribute to a programme, too many tend to make for dry and uninspiring viewing.[15]

Based on this realisation, educational content within the programme should be, as far as possible, embedded in an entertainment structure. Otherwise, pupils will switch the channel. According to Schroeder (2000), 'it was discovered that [children] would be willing to watch more educational programming if it was less didactic and more entertaining, but children find few such programmes to entice them. This is why the BBC Schools Television aimed to orient all production materials to make learning 'invisible' (e.g., Teletubbies, Tweenies). Subsequently, as Hunter (1990:10) suggests, attention be used as a natural motivator leading to learning. As Silbergleid (1992:5) argues,

> Morris (1984), Utz (1980), and Zettl (1976) assert that the writers of television programs believe that the application of certain production techniques could possibly increase the level of attention paid to a program. This theory has now advanced one step further by entering the realm of instructional and educational programs where it is believed that increasing the attention paid to a program might lead to increased achievement (Bronfenbrenner, 1976; Schramm, 1976; Hosie, 1987; Morris, 1984).

Thus, to create an effective educational television product (especially for primary schools), producers have to be familiar with entertainment structures. Television has to contribute something to education, rather than merely duplicating a formal classroom. As Murray (1987: 78) mentions,

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[15] Ibid 11.

> 'educational television material needed to be designed to suit a wide variety of contexts extending far beyond the formal classroom setting. There was therefore a requirement for flexible material different from traditional broadcast product'.

Sharp (1995) also found that pupils were better motivated when schools television programmes were interesting and entertaining. She found that combining attractive content and features with a coherent structure helps pupils learn from television.

The structure of current IRIBEN programmes, however, are similar to a 'televised lesson', or as Salomon (1977) explains it, the direct transmission of learning materials to learners. However, following Hobbs (1998: 262),

> educational producers have also adapted to the public's expectations that television be entertaining. The "talking head" master-teacher model of educational video programming has long given way to programming which makes use of the conventions of commercial entertainment - jazzy music, celebrity hosts, special effects title sequences, and most importantly, good storylines.

Ball, Palmer, & Millward (1976) found that programmes that are designed to both teach and entertain can be successful in developing a young child's skill in particular subject areas. These programmes are made more entertaining and attractive through the use of visual production techniques, which producers have relied on to maintain the attention of the viewers (Brock & Goldstein, 1985). There is evidence that certain features of television programmes – intensity, movement, contrast, change, novelty, and incongruity – are influential in attracting the attention of young children (Sharp, 1995: 173). Morris (1984 quoted in Silbergleid 1992:9) also found that,

> "pop-in" animation, moving diagrams, high contrast graphics, scenarios, and contemporary music, when used with an instructor, have a better effect on student achievement than the standard "talking head" instructor with chalkboard. It was found that graphics and "pop-in" animation alone do not significantly improve immediate achievement, but that students' attitudes about the program itself do improve, since it is more entertaining.

Furthermore, the ability to make connections between real phenomena and theoretical concepts is a particular strength of television as a learning medium (Bates, 1981; Kozma, 1991; Sharp 1995). Following Mason,

> [...] drama content for issue-based narrative for personal and social education, for example, can be, and is, extremely powerful, [for] illustrating issues and stimulating discussion difficult to engender using other types of resources. Alternatively, a modular format such as in the Numbertime maths series for 5-7 year olds takes, per programme, one simple concept and provides a number of approaches to that concept providing reinforcement, and consolidation of prior learning, which may have taken place in other contexts, or in the classroom.[16]

It is evident that entertainment engages, but when grafted with education should not be over-sweetened. Over the years there has been much debate around definitions of 'educative' content and 'edutainment' formats. Balancing educational content with entertainment in 'edutainment' products for Schools Television is therefore a matter of concern. For instance, educational programmes for home viewers – depending on the age group – should provide more entertaining education rather than delivering dry materials. Obviously, Schools Television programmes, which are supervised by teachers, need a different structure. In these respects, Koumi (2006:46) proposes that

[16] Ibid 12.

> Entertainment is certainly not inimical to learning: neither does it necessitate superficial coverage of the subject. For example, detailed narrative exploration can bring out the intrinsic fascination of a subject, which is a powerful aid to learning, precisely because it is so entertaining. In any case, the occasional lighter, entertaining item can re-engage viewers' attention.

It is an ongoing challenge for Schools Television producers to identify criteria to differentiate between 'high quality of television product', and to understand what professionalism means in the context of educational objectives. They need to understand whether the main criteria of success is whether the final programme should be judged as 'unappealing', or 'exciting', or whether the matter of 'entertainment versus instruction' is the main dilemma, or whether producers should employ a complex or simple audiovisual production technique to achieve such objectives. Pedagogical effectiveness depends on how well educational policy and programme makers are informed to harness the strengths of technical media for better education.

In other words, quality is the main element for determining the relationship between educational material and the value of television for education. Broadcasting educational programmes for pupils at home – like other mainstream channels' strategies – inevitably gratifies viewers in order to keep them in front of the television set for an entire programme. However, the main aim is not to make the channel popular, but to successfully achieve educational objectives through the programme.

A number of issues are therefore critical for the success of Schools Television in Iran. One of the most important is developing strong public relations to promote knowledge, in combination with strong sponsorship and persistence. In addition to

prioritising content as well as context, production styles and distributions must also be considered. In particular, there should be a strong relation between Schools Television programme makers and teachers, pupils, and parents. In this way the processes of teaching and learning will be accepted and valued as a permanent focus of educational technology.

2.5.1 An assessment of the quality of educational television production techniques

In terms of both educational content and technical manners, the definition of quality television affects the creation, production, placing and distribution of Schools Television products. In the case of the Schools Television, this also involves in meeting the quality standards indicated by the broadcaster in relation to the educational policies.

Balancing educational content and televisual production techniques can be seen as the most decisive variable determining the qualitative outcome of Schools Television. Thus, the underlying educational concepts or messages that the television proposes to convey create an apparent neutral quality of production techniques when the educational content and televisual materials are weakly linked. This can be measured by a degree of commitment toward the specific needs of the production, in particular, a carefully weighted mix of educational fulfilment and capacity for televisual innovation.

One of the unique strengths of television programming is that it allows for narrative structure. For instance, creating a magazine format with a range of televisual techniques that includes comedy sketches, game shows with actual children, music videos, animation, graphics, celebrity performers, and so on can be the basis for a high-quality

programme, as long as the concepts are coherent and intertwined with educational content. The aim of this sort of structure, apart from the gratification of viewers, is to promote positive attitudes toward educational content, to promote the use and application of problem-solving processes, and to present proper educational content in an interesting, reachable, and evocative manner. In contrast to this approach, a straightforward structure may deliver the contents of educational material directly to viewers via an uninspiring 'talking head' format.

One theoretical model in particular – Fisch's 'capacity model' (2000), contributes significantly to understanding how production techniques are not 'neutral', but linked to particular educational values. According to Fisch, the comprehension of educational content depends not only on the cognitive demands of processing the educational content itself, but also on the demands presented by the narrative in which it is embedded. A detailed comparative study in chapter 7, which is based on Gagné learning events theory in both structures, also supports the capacity model and shows the differences between each approach.

Following Fisch (2002: 25), according to the capacity model, if there is a substantial discrepancy between the structure of the narrative and the meaning of the educational content, the mental resources needed for comprehension are generally devoted primarily to the narrative; less resources are available for processing the educational content (see figure 2-1). Based on this theory, production techniques appear 'neutral' when the content is not directly relevant to the narrative. In such cases, educational materials would be tangential to

the narrative and the distance (*d*) between the educational content and narrative would be large.

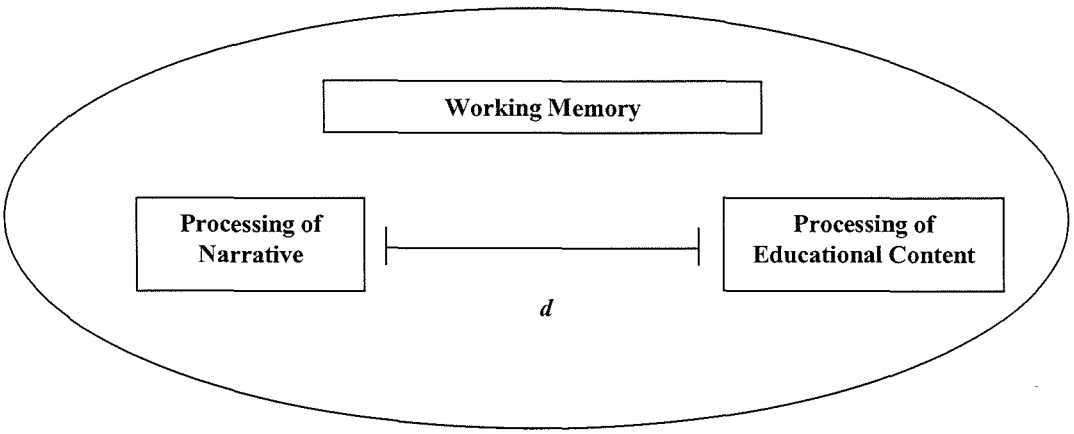

Figure 2.1 Theoretical construct described by the capacity model (Fisch 2004: 144).

On the contrary, if the narrative was embedded into the educational material, when the narrative provides key clues to solving the problems, then the content is integral to the narrative and the distance between the two would be small. Following Fisch (2002: 25-26),

> [...] if the educational content is integral to the narrative, then the two complement, rather than compete with, each other; the same processing that permits comprehension of the narrative simultaneously contributes to comprehension of the educational content.

Therefore, Schools Television producers have to be concerned about these two fundamental areas and their crucial relationship to effective learning. According to capacity theory, as we will see in the following chapters, the essential difference between the production models of Schools Television in Iran and the United Kingdom is that content in the former is 'tangential to the narrative', while in the latter it is 'integral

to the narrative'. Educational material on 'decimals' can be used as an illustration here. On IRIBEN, the narrative was delivered through a teacher's presentation, with voice, body movement and a whiteboard as the main mediators. There were also a few pupils in studio/classroom to answer the teacher/presenter's questions. In contrast, on BBC Schools, the same educational content was delivered by Sydney Olympic medallist Kelly Holms. Her presentation was accompanied by a televised competition between well-known athletes, slow and fast motion television techniques, exciting music, and the ambiance of a stadium, all of which were accompanied by graphics to explain the decimal content.

From the view of the capacity model, in the IRIBEN model there is a large gap between the processing of narrative (i.e., the 'talking head') and televisual materials. Here, television is implemented mainly as a container for educational content, and there is little creative use of the capabilities of the medium. In contrast, on BBC Schools there is a stronger relationship between the narrative and educational content. Kelly Holms' presentation creates a strong and coherent link between the educational content and television, and other televisual materials are supporting the contents.

In other words, as will be discussed in chapter 7 the narrative on IRIBEN (in either story telling or through a talking-head presentation) and televisual materials operate in parallel and separate spheres with no structural links. Therefore, the distance between processing the narrative and processing the educational content could be considered large and might weaken the learning process. This is against all objectives of producing educational television, as Fisch (2004: 144) emphasises,

> when the educational content is tangential to the central narrative of a television program, the two parallel processes of comprehension compete for limited resources in working memory. The result is that the educational content cannot be processed as deeply as it might otherwise be, and comprehension of the educational content is likely to be impaired.

On the other hand, Schools Television in the UK is strongly rooted in narrative, particularly due to the tradition of narrative in film and mainstream television channels. However, the best educational programmes are those that not only offer a motivating, gripping and captivating variety of stimulating images, but that are also closely related to educational content and pupils' prior knowledge. As Fisch (2004: 146) argues, 'one important viewer characteristic that affects the demands of processing narrative is viewers' prior knowledge of the subject matter around which the narrative revolves'. In this case, the distance (*d*) between processing the narrative and processing the educational content is small. This means the parallel processes of television viewing and education become harmonised, rather than competing for the limited resources of working memory. As a result, Schools Television programmes are likely to be stronger and more effective.

The use of an oral form (e.g., the talking head), which is normally accompanied with less visual materials, is against the nature of television. It creates a bigger gap between the processing of straightforward messages by a teacher/presenter and the processing of educational content. Therefore, through an unfamiliar television product, the memory of pupils must work harder in order to comprehend both verbal and educational contents. However, this is not a simple matter of contrasting visual and oral forms of communication, but rather, as Hodge and Trip (1986: 46) emphasise, related to

the fact that visual media allow for greater resolution than aural media. Therefore, a lack of televisual materials (as exemplified by images of a teacher, merely talking) does not recognise the capabilities of the medium and undermines its pedagogical effectiveness.

2.6 Production of pedagogical television and other media products

For more than five decades, television has been central to the entertainment, information, and education of millions of viewers around the world. During the last decade, the acceleration of technological innovation has provided spectacular and exciting opportunities. This has been particularly important for television, which has long been criticised as being a one-way path of communication where broadcasters provided messages to passive viewers. Its change into a new democratic structure of 'interactivity' is in fact an extraordinary transformation from a long tradition of linear medium to the non-linearity of the digital era, where viewers are more in control of both channels and messages.

When 'remote control' for television sets arrived in the 1970s, it transformed viewers from being passive observers into people who could make choices, and who could instantly react to programme content, presenters and production styles by tuning to alternative channels. This was an early indication of how television could encourage interaction between audience and media. Later in the 1990s, digital technology offered another breakthrough with the 'red button revolution'. Now, in addition to being able to control hundreds of television channels, viewers can select sections to watch within live programmes (e.g., selecting a particular tennis court at Wimbledon). It is now even

possible to pause or rewind live programmes. In addition to these technological changes for home audiences, television viewing was rapidly extended into social spaces dedicated to other purposes (e.g., banking, shopping, voting, playing games, sending and receiving texts, and email messages). Such possibility is even greater for computer users, due to the interactive nature of the technology, where users can access thousands of materials such as texts, hypertexts, still images, maps, video clips, news groups, and chat rooms, among others.

These new technological advances also had major impacts on teaching and learning strategies within schools. The Internet, personal computers and electronic whiteboards transformed both classrooms and teaching attitudes, perhaps to an even greater extent than schools radio and television had in previous decades. In the United Kingdom, pedagogical broadcasting has a history as long as broadcasting itself, and education had become an integral function of various media-based products. More than eight decades of radio and half a century of television have been produced for educational purposes either at home (e.g., Teletubbies, Tweenies), schools classrooms (e.g., El Nombre, Since Zone), or colleges and universities (various course on the Learning Zone and/or Open University). Such programmes have been broadcast through terrestrial, satellite, and closed circuit television, distributed on discs for gramophone records, recorded onto audio cassettes, videos and CD-ROM/DVDs, and even embedded into websites. This continuity points to the permanent, indefatigable, and passionate efforts by policy makers, educational technologists and experts to use the newest available technologies to advance learning processes.

The changes wrought by these media are hence wide-ranging and difficult to determine without the benefit of hindsight. The remote access of information enabled by the Internet and other new media has altered the meaning of television in the classroom, and extended students' experience of educational process into a 'virtual classroom', which includes home and public domains. As Mohsenian Rad (2003) argues, 'we are moving towards an intercultural era very swiftly, when globalisation has become gloculisation'.[17] In fact, MacLuhan's revolutionary theory of the 'global village' is more tangible than ever. Ashton (2007) suggests,

> what the Internet has taught us is that you don't necessarily get away with less production value in certain contexts. I have a dream that children in school in Britain could email a school in New Zealand, which is near a volcano and say, will you children go and make a film...make us a five-minute film about your local volcano, because we never seen one. Send it to us over the Internet with some descriptions. We in Britain can we do something for you? Are there any pictures from here that you would like? Maybe you would like to see London or something else... One day it may be that the informal use of generated content will take the place of what used to be very expensive 'television'.

Of course, the use of amateur production must be adequately justified and there should be a good case for this kind of social learning – otherwise, there are a variety of excellent clips on diverse issues available for children to use. Ashton's point here is simply that the extraordinary value of global communication offers exciting possibilities for education. For the purposes of this study, the most important difference between traditional educational television and new media-based technologies is the interactivity of the latter. However, there are certain areas in each field of technology that cannot be

[17] Definition by Dr. Mohsenian Rad in 2003.

replaced. One of the most powerful and unique to television is the technique of narrative. In fact, while interactivity has become most significant element of new media for education, the sustaining influence of narrative cannot be ignored. Following Richmond (2001),[18]

> I am sure that teachers and learners will continue to benefit from the narrative power of moving pictures. The moving pictures telling stories, whether they are factual or fictional stories about the world, will remain an essential learning tool forever.

The value of interactivity is undeniable, but its effectiveness depends on the nature of the educational objectives. In all cases the production structure of a television programme, for example, must be coherently aligned with the educational content in either a linear or non-linear way, as Bacsich (1996) argues:

> I think we all have to admit that educational television is linear – scene follows scene. But many other media that people enjoy and benefit from are also linear. A detective novel is linear, one clue at a time – in fact, it would spoil the value of a detective novel to read it in a non-linear way. So we can't regard linearity as such as being bad.

Furthermore, interactivity should be well planned, or it might be distractive. We can compare the act of revising with a hard copy of a textbook versus using the same materials on the web, particularly where the latter offers hypertexts. The first specifies the exact material that should be understood and learnt (such as in preparation for an exam). However, while the Internet materials may offer more relevant and additional information, there is a risk that novice web readers/surfers can become lost through

[18] John Richmond Commissioning Editor Channel 4 learning, [1993-2003], interviewed by the author, 07 March 2001, London, UK.

interacting with endless links and materials. This is then extremely time consuming, and in terms of revision may not be clearly targeted for the purpose. Following Bacsich (1996), 'there is nothing worse than giving a lecture and having lots of students constantly asking questions. There has to be a time and a place for interactivity'. In fact, there should be a balance between 'independent' and 'interactive' learning activities. Following Koumi (2007)[19],

> [Firstly, we have to admit that] the traditional narrative programmes are certainly expensive to produce. Secondly, it's to do with the new devotion to constructivism, which says students should not just be told things but rather should interact with information. But I predict there will be a reaction against this view if and when narrative TV is designed pedagogically, including opportunities within the programme for knowledge construction by students following activation of prior learning and creation of motivational suspense so that students yearn to learn.

Nevertheless, interactive technologies have allowed convergence between educational television and other media-based technologies, and the traditional structure of Schools Television has been heavily influenced by interactivity. The Internet has transformed educational programming to include short clips and segments, which are instantly accessible for teachers and students alike. As Mason (2008) argues,[20]

> These changes in usage had an effect on programme-makers. Programmes no longer needed to be long enough to justify the effort a teacher had to put in to put the children in front of the programme, but could be the length that was most effective for the subject/age range of the pupils. Long-form programmes started to be constructed in a more modular fashion so that teachers could pick and choose the sections they wanted, should that suit their particular teaching

[19] Jack Koumi, Educational Media Production Instructor, (author's personal correspondence via email received 23 December 2007).
[20] Ibid 12.

> style or situation. The advent of long-form programmes composed entirely of clips – with a loose narrative structure but intended to be used in any order a teacher chose – meant that random access had become a requirement and the BBC published DVD versions of series such as "Science Clips" with that in mind.

Across 84 years (1924-2008), schools broadcasting in Britain shifted from a tradition of scheduled-based broadcasting obliged for 'appointment to view' into a 'recording facilities' period, which enabled teachers to time-shift their use, independently of broadcasting schedules, and to watch specific segments as appropriate for their needs. However, neither schedule-based programme viewing nor tape recording could offer genuine interactivity until the digital innovation. Using audiovisual and other materials on demand created a type of democratic educational environment and enabled teachers and pupils to interact with materials independently, rather than following prescribed contents offered through restrictive scheduling. However, as mentioned earlier in this chapter, it is important to balance 'interactivity' through non-linear educational-based media (digital television, DVDs, CDs, Internet) and 'linear' media (books and analogue radio and television). Technology alone cannot provide for better learning, but must rather be part of broader educational policies based on research into how to best integrate media technology and educational content.

2.7 Conclusion

This chapter has argued that the implementation of an educational television model from Britain for Iran cannot merely be based on Western production styles and values, and that it is important to understand the pedagogical cultures of both societies.

Successful schools television, like other technologies, is a product of modern government based on individualism, rationalism, and secularism. Therefore, the importation of such a model for Iran is a very difficult and complicated task, given the heavy influence of socio-religion and the fact that the central government has ultimate authority to prescribe the content of both education and media.

Whereas teachers in Britain retain control over and independence in using their teaching materials, and share ideas through 'dialogical relations', in Iran education is primarily regarded as the transmission of facts to passive students who must memorise educational content without discussion. Accordingly, while Schools Television in Britain is intertwined with other class activities, in Iran Schools Television is broadcast through a dedicated educational television channel with no tangible link to other pedagogical practices.

Therefore, this research aims to introduce key issues and suggest lessons that Iranian educators and programme makers might learn from long-term experience of Schools Television in Britain. In following chapters, and based on the findings of this study, it makes suggestions for creating a compatible pedagogical television production strategy. It aims to assist IRIBEN in extending its production values, and understanding various aspects of pedagogical television grammar in the context of Iranian domestic issues, needs, and cultural values.

This chapter argued that while television has provided its initial functions of information, education and entertainment simultaneously since the early days of its service, it is most widely known as a technology for amusement. Therefore, using

television for educational purposes, especially in the classroom, has been widely disputed. It was and is believed that children watch too much television at home. In various ways, however, Schools Television has demonstrated its capabilities in the classroom, not as a 'break from work', but as an integral part of teaching processes. Although children rarely watch formally-called 'educational television' at home during their leisure time, educational content is often hidden in children's programmes. In fact, children's television broadcasters in Britain attempt to make the educational content in their programmes invisible. Conversely, producers of educational programmes implement mainstream television production styles in order to simultaneously gratify viewers and successfully convey educational material.

Such pedagogical television production structures are also theoretically supported. In particular, narrative plays an essential role in high-quality educational production. This chapter argued that combining the cultures of education and television creates complications for comprehension of both, as people have limited resources in their working memory. When educational content and the central narrative programme are parallel to one other, the distance between the processing of narrative and the comprehension of educational content increases, and the limited resources of memory have to compete to comprehend both. As Fisch (2004: 144) argues, 'the result is that the educational content cannot be processed as deeply as it might otherwise be, and comprehension of the educational content is likely to be impaired'. In contrast, when the educational content is integral to the narrative, distance between narrative processing and educational processing would be small, therefore comprehension would be balanced

and harmonised rather than competitive. In the following chapters, other theoretical perspectives will be introduced, including a theory by MacMahon and one about the conditions of learning by Gagné. Both support the idea that intertwining the education with other activities provides better learning processes and comprehension (See Chapter 3).

Television has therefore made long-term contributions to education, either informally for home viewers, or formally for pupils in schools. This led to the creation of a variety of production formats to assist learning processes. However, by mid-century all television production styles and formats struggled due to a lack of two-way communications or interactivities. The exciting digital era in the 1990s thus created enormous opportunities for television programming. Didactic television is now being swiftly replaced with a new generation of on-demand services. Educational television hence has greatly enhanced possibilities to communicate with viewers for better learning.

Although interactivity and new non-linear structures of access to televisual materials are breaking boundaries between broadcasters and viewers, more linear narrative styles continue to provide robust and attractive materials. Similarly, educational television presented in a non-linear style can present itself as commercial programmes that pupils choose to watch either at home or in the classroom. Narrative television is still unique and irreplaceable. Story-telling is thousands of years old, and radio and television merely provide this through mass media. However, as mentioned in

this chapter, what matters is the approach rather than the technology, and that there is attention to balancing the materials with educational content.

In the following chapter, the relationship between television, education, and learning theories are examined through exploring two sets of theories by MacMahon and Gagné. This will provide a better understanding the cultures of education and television, and the importance of building a bridge between them, provides the groundwork for the entire study.

Chapter 3

THEORETICAL ISSUES

3.1 Introduction

This chapter offers an overview of the theoretical issues involved in analysing educational television, specifically in relation to theories of learning and educational production factors. It frames an examination of the effectiveness of using integrated learning and televisual materials in schools television.

Basically, the study of educational television is rooted in two broad bodies of theory: theories of learning and theories on television production. Behaviourism, cognitive, and constructivism, three grand theories in education are reviewed in this chapter. This study also surveys theories on television production features with special attention to capabilities for learning purposes. Accordingly, this chapter discusses the functions of educational theories in the creation of schools television programmes. This will support a detailed analysis of the model of production used in two separate examples of school programmes in the United Kingdom and Iran in forthcoming chapters.

3.2 Educational television

I have been making educational television programmes in different areas since 1988. These programmes often suffered from the lack of concrete production structure and poor televisual techniques while still aiming to incorporate educational contexts and theories. For educational television in Iran more specifically there has always been a gap between practice and theory in both education and television,

which leads to the production of inferior programmes.[1] One classical reason for this outcome is a general divergence of the two powerful and discrete cultures of education and television. When they are employed together as an integrated educational device, there must be a new definition for theory and practice. Figure 3-1 illustrates how they share power in an area recognised as 'educational television', which both reproduces and reshapes their character and traditions for new applications.

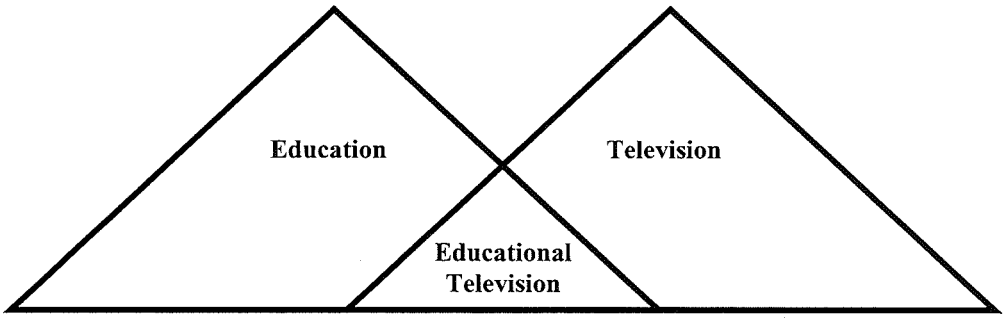

Figure 3-1

However, this combination has always been an ongoing challenge, with a history of satisfaction and disappointment. As Cain and Wright note:

> [educational television] is sometimes like trying to ride two large and spirited horses by placing a foot on the bare back of each: an exhilarating process when both gallop as one towards a common goal and a somewhat excruciating one when each wants to go its separate way (1994: 6).

Although educational television is located between education and television (Figure 3–1), the influence of each culture is not necessarily equal. Television selects items from education, which may be reproduced in audiovisual format, while education primarily provides entire learning resources. Hence, the contribution of television is more flexible than that of education. In other words, the fundamental

[1] See chapter 7

principles of education cannot and should not be changed to fit television; on the contrary, the power of the mass media (i.e., television) has to be harnessed for educational purposes (Jones 1994; Dyke 1999).

In practice, television programmes are fundamentally subjective and based on or influenced by personal feelings, tastes, and opinions. Educational materials, however, are mostly objective; they rely on facts and are uncoloured by individual views. Thus, when these media encounter each other in educational television, they have to make compromises on common issues. For instance, a subject like maths contains strict rules and principles, which are difficult to translate into audiovisual material. However, exploring how to use maths in real life would be an appropriate area for contributions to both education and television. For example, as we will see in a sample schools television programme from BBC Education in Chapter 7, the concept of decimals can be communicated through the example of an athletic competition in which a gold medal for a hundred-metre run can be replaced by a silver or bronze if the time differs by one hundredth or one thousandth of a second. This illustrates that there can be an effective combination of educational concepts and televisual materials.

Bates (1980: 394) defines an 'effective' television programme as one that a) exploits the potential or advantages of the medium in a given context and b) achieves a range of objectives recognised as valuable either by the designers of the programme or by those using the programme for learning purposes.

One of the main aims of educational television is to facilitate the learning process and to meet a set of educational objectives (i.e., those outlined in the national

curriculum). This is completely different from the purpose of other types of television programming and much more difficult. Reliable educational television is not merely good television, but also has to be a valuable educational resource. Hence decisions about the structure and style of programmes are just as much educational as technical decisions.

To achieve such success, educational television must have an intense relationship with education and its ultimate goals. It has to be a path between two cultures and, more importantly education also has to share the areas of theories of learning with television. In fact theories of learning can consolidate the relationship between education and television and would be able to provide stronger position for educational television, and need to be considered simultaneously (Figure 3-2).

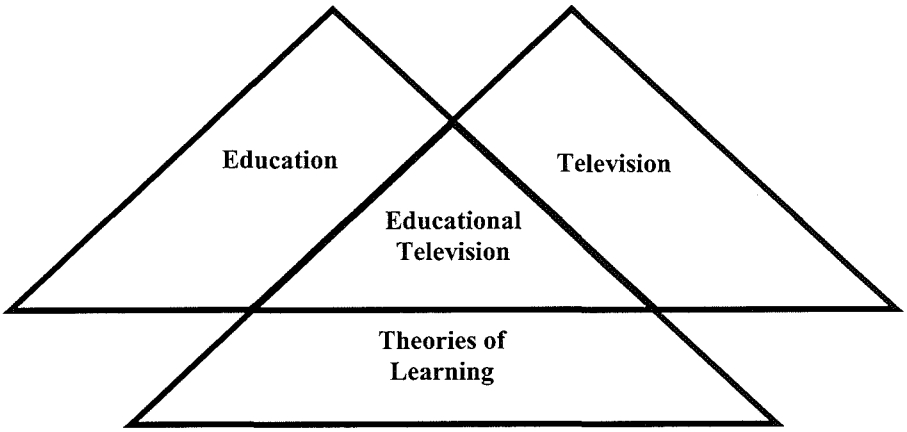

Figure 3-2

Following Berliner and Calfee (1996: 808),

> The challenge of discussing technology, learning theory, and education is increased by the fact that all three areas interact with one another. Changes in theories of learning affect uses of technology, but new technologies also make new kinds of interactions possible and hence affect theories of learning.

Determining which educational concerns can best be developed by television requires not only research on television and educational principles and structures, but also on learning theories.

3.3 Relating educational television and learning theories

Discussions about education are mainly rooted in learning theories, while theories of television are coordinated with media issues. For educational television, these theories must be coherent and commensurate with both learning and media and the relationships between the two.

Although the cultures of education and television apply their own theories in broad areas, there is little research on the correlation between learning theories and educational television production. There are still lack of principles and theory, and there is no exclusive technique for educational programme makers to employ (Hancock, 1977; Jones, 1983). Shaw (2003) also points out that,

> disciplined examination of implications and contributions of cognitivist and constructivist conceptions of learning and instruction for the design and use of educational television is scant.

One of the important goals of educational television is to fulfil the objectives of the national curriculum. As Sharp (1995: 168) mentions, for the majority of both primary and secondary teachers [in Britain], this would be one of the 'very important' reasons to use educational broadcasts. Programme makers should thus inevitably engage with various learning theories.

The implementation of theory by both providers of schools television in the United Kingdom (BBC Education and Channel 4 Learning) rely mainly on coordinating programmes with the British National Curriculum and Qualifications

and Curriculum Authority (QCA) schemes of work. These resources are employed as main guidelines, rather than as overarching learning theories or definitions for theoretical production formulae.

Karen Johnson, former Executive Editor for Children's Education at the BBC, points out that while BBC Education has made maximum efforts to employ televisual capabilities in order to meet guidelines and promote particular ways of approaching teaching as advised by the National Curriculum and QCA, they do not 'subscribe' to any 'learning theories'.[2] She emphasises that 'there is no departmental view of the right way to learn'. She argues that educational programmes have to move beyond learning theories and that production should be more practical and tangible. She mentions that what matters is how the programmes can be evaluated as 'a good piece of TV' or whether they are able to grasp students' attention and inspire them through the learning process. BBC Education does not merely rely on particular learning theories, but on more theory–practical solutions, which have been employed as a consequence of the experiences of its programme makers and curriculum advisers.[3]

The process of employing learning theories in school programmes on Channel 4 is similar to what Richmond describes:

> We do have all of the government curriculum documents for the four parts of the United Kingdom: England, Wales, Scotland and Northern Ireland and we use those. [...] It is partly consulting with educational officers along with my own reading. I am aware of a certain amount of the fundamental theories of learning that educationists depend on, but I think it would be wrong that I have a particular theory of

[2] Interviewed by the author, 16 May 2002, London, UK.
[3] New title for 'educational officer' since year 2003 at the BBC Education.

> learning in my head and then translate it automatically into television, multimedia materials.[4]

This implies that learning theories are implicitly and multifariously embedded in schools television in Britain; therefore, it is impossible to identify one specific formula for the process of educational television production from planning to broadcasting. Once the national curriculum and QCA work schemes have been identified, the task then becomes determining how television programmes might best deliver those requirements. However, it has to be noted that the power of television can reach even beyond the curriculum areas; 'as a resource, it develops children's understanding, putting the school curriculum into wider context and showing its relevance to the real world' (Meyer, 1993: 228).

As mentioned, learning and televisual theories are intertwined throughout the entire production process through programme makers, curriculum advisers, and commissioners and not from a concrete production formula. Thus, for a detailed analysis of schools television and to gain an understanding of the process of learning–production work, it is necessary to break down the structure of a programme into its fundamental elements, in particular, learning theories and televisual production features and their issues of interplay. It should be noted that while this type of analysis illuminates the causes rather than the effects of making programmes, it will also assist in indicating where programme makers and educators might look for evidence of the effectiveness of educational programmes.

[4]Author's personal correspondence with John Richmond, Commissioning Editor Channel 4 Learning [1993-2003], via telephone 3 July 2002, London-UK.

3.4 Theories of Learning

Although I am unable within the limits of this chapter to re-examine all contemporary theoretical philosophies of learning processes in detail, it will be worthwhile to provide a brief account of three main theories of learning. These can be employed to describe how learning takes place and also assist the study in examining a relationship between theories of learning and educational television productions.

Behaviourism, cognitivism, and constructivism are three major types of contemporary learning theory. A brief review of each approach will define the main theories and, in this study, illuminate the capabilities and compatibilities of television in relation to learning.

3.4.1 Behaviourism

Behaviourism has its roots in the work of Thorndike, Pavlov, and Skinner and was the dominant learning theory until the mid-1960s (Ashman and Conway 1997: 19). Behaviourists believe that learning is a sequence of stimulus and response actions in the learner, which are related to conditioning (Roblyer et al. 1997: 59). Wetzel et al. (1994: 189) point out that

> behavioural approaches focused on environmental causes of behaviour change, emphasizing the role of external stimulus presentations designed to control behaviour.

Teaching from a behaviourist perspective involves telling or transmitting fixed truths to students, wherein the teacher aims to achieve a desired behaviour and ensure that students have learned all the transmitted knowledge.

Measurable and observable responses to internal or external stimuli are among the key characteristics of behaviourism. Learning in behaviourist philosophy is seen as the acquisition of new behaviour; hence, teachers use various rewards or discouragements to change students' behaviour. Skinner in fact emphasised that 'learning is the result of the reinforcement or punishment of behaviours within a context that is deliberately manipulated by the teacher' (Ashman and Conway 1997).

3.4.2 Cognitive theory

'Behaviourist theory often explains behavioural change well, but it offers little in the way of explaining conceptual change' (Twomey Fosnot 1996: 9). Following Wetzel et al. (1994: 189), behaviourists do not make 'reference to mental processes'. In the 1960s, psychologists became dissatisfied with mere behavioural explanations of thinking and learning and concentrated instead on students' minds, believing that learning happens as a process inside people's heads.

Cognitive psychologists view learning 'as a constructive process in which learners actively engage in the process of integrating new knowledge with old' (Wetzel et al., 1994: 189). Here, students are required to solve a problem rather than just respond to stimuli or learn certain content skills. In Vygotsky's view, 'children must comprehend meaning and integrate the knowledge into their own thinking' (Vygotsky 1962; 1978). Gagné (1985: 55) also notes that 'these are the skills by means of which learners regulate their own internal processes of attending, learning, remembering, and thinking'. He believes that 'learning is something that takes place inside an individual's head—in his brain' (Gagné 1974: 4-5).

Ashman and Conway (1997: 41), believe that the definition of cognition and cognitive concepts can be summarised as follows:

> Cognition refers to knowing and thinking. Hence, it involves taking in, storing, retrieving, transforming, and manipulating information that is obtained through the senses. It also involves perception, awareness, judgement, the understanding of emotions, and of course, memory and learning.

According to Vygotsky's theory, Bruner (1986:73) mentions that teachers are supporting children's learning by building on what they already know and using peers and the notion of a 'zone of proximal development' – he suggests this was the gap between what a child knows and what he/she can learn with the help of another adult or more knowledgeable peer.

3.4.3 Constructivism

During the last two decades, constructivism had a major influence on learning and teaching. This theory, which defines learning as either individual or a social knowledge construction, is rooted in the field of cognitive science, particularly the later work of Jean Piaget (Twomey Fosnot, 1996).

Constructivism is basically opposed to observable phenomena, which often neither agree with behavioural criteria for learning such as changing behaviour and skills, nor concentrate on intellectual development and deep understanding as the objective of instruction, as do cognitive views (Twomey Fosnot 1996). Constructivists believe that learners construct an exclusive, individualised description of reality from their own experience; they are not just passive receivers of knowledge, which is deemed to be 'complete and correct, from a teacher or authority' (Selley 1999:3). In Piaget's view, 'what we see, hear, and feel—that is,

our sensory world—is the result of our own perceptual activities and therefore specific to our ways of perceiving and conceiving' (Glasersfeld 1996: 3).

Constructivists believe that each student brings his or her own prior knowledge, experience, and beliefs to a learning situation and that the learning process can be controlled and mediated internally by students. The classroom in the context of constructivist theory is student-centred, rather than being teacher-centred as in the traditional model, so that knowledge is not merely transmitted by teachers but can be obtained from various sources by students themselves. Either the individual or social internal construction of knowledge is the core idea of constructivist theory.

3.5 Theories of learning and television practices

As mentioned earlier in this chapter, theories of learning can consolidate the relationship between education and television. Therefore it would be necessary to examine theories of learning in order to understand in which extend they can be implemented effectively for television practices. However it has to be mentioned that it would be impossible to write a theoretical prescription for educational television producers to follow, but it builds better understandings and a bridge between learning theories and televisual practices. Moreover this would assist the study to find out in what extent is theories of learning can be implemented by educational television, as Hancock points out:

> we believe that general learning theory can equally well be applied to learning from television; for example, that the television viewer must be ready to learn and motivated, that he will learn better if his viewing is rewarded and reinforced, that he must feel television instruction is a useful activity, and that if he is actively engaged in a programme his learning will be so much greater (1971: 171).

According to Bigge (1982: 3), 'everyone who teaches or professes to teach has a theory of learning'. The discussion of the role of learning theories in educational television production is obviously vital for programme makers. However, producers may or may not be able to explicitly describe the learning theories that they employ in their programmes. A careful study of these theories can clarify particular areas of learning and media in relation to the strengths and weaknesses of television as an educational tool, as well as offer insight into how to employ one for the other, following MacMahon (1997, 87),

> as educational television operates within the wider environment of the educational world we can accept that these theories have also influenced the ways in which we formulate and produce programmes.

MacMahon examined four learning assumptions such as transfer theory, shaping theory, travelling theory, and growing theory in order to identify options for building bridges between learning theories and educational television.

3.5.1 Transfer theory

Transfer theory basically follows the behaviourist paradigm, and the learning process is viewed as telling or transmitting fixed truths to students. Learners follow definite rule-ordered processes to achieve new skills. In televisual practice, this might be the easiest way to make educational television programmes, in which knowledge is just transferred by a teacher or expert to the learner. MacMahon (1997: 87) emphasises that 'in this theory, delivery is a central concern, with considerable effort expended on preparing the material and on devising 'effective' methods of transfer'. Berliner and Calfee (1996: 811) characterize the transmission model in the following way:

- learning involves the accumulation of particular sets of facts and skills;
- teaching involves the transmission of facts and skills by an expert; and
- assessment involves an accounting of whether the desired facts and skills have been acquired.

3.5.2 Shaping theory

In both positive and negative terms, television, which has an enormous and predominant power, can offer models and shape viewers' beliefs. Like 'conditioning' in behaviourism, shaping theory can be employed by producers in television to present and demonstrate a subject in order to elicit required responses. On the other end, viewers 'copy' such models. In this sense, television has always been criticised for its negative influences, especially on children. However, the structure of popular programmes in cookery, gardening, or DIY is strongly influenced by this theory (MacMahon 1997).

3.5.3 Travelling theory

This theory is challenging for producers of educational television programmes. Here, the task is not merely to convey 'knowledge' to viewers; instead, learning is assumed to be a 'journey' with the teacher in the role of a tour guide. This assumption is rooted in constructivist beliefs, which argue that learners in a group have to explore knowledge and concentrate on problem-solving tasks. For educational television, programmes based on this theory simply provide an introduction to knowledge and not knowledge per se; the rest remains for students to experience and explore. However, these are limited in terms of factual knowledge.

3.5.4 Growing theory

Growing theory emphasis individuality and the unique position of each learner. Teachers provide different types of guidance and encourage students to develop their knowledge, though not necessarily for completing a task, as the learning process is viewed as everlasting. The focus here is on learners' individual and subjective change. This theory would be the most difficult for educational television to employ. For instance, the structure of open-ended educational television programmes raises questions instead of providing answers. These programmes can offer a communicative and creative site for learning either existent or unknown knowledge as a part of students' explorations.

3.6 Implementation and Feasibility

In general terms, learning can occur by obtaining knowledge from the outside world or by involving the personal, individual, and inner understandings of students in the learning process. MacMahon (1997: 89) suggests that interaction between external information and inner understandings provides 'deeper and more mature understanding of the worlds in which we live'. He emphasises that the 'right' answer or 'right' way are objectives of the transfer and shaping theories. Here, knowledge and skills are related to 'external reality' and learners are viewed as passive receivers of information; the teacher 'fills' students' minds. This largely characterizes the structure of television programmes in which one-way messages 'from' television 'to' passive viewers still dominate (see Collins 1983). As Koumi (2006: 105) emphasises,

'the aspiration of the video producer is that more or less the *same* knowledge should be assimilated by all the learners'.

In contrast to the travelling and growing theories, concerns about a learner's development as a person and the development of their knowledge is related to 'inner reality'. Learning is based on cognitive and constructivist theories and viewed as an active process in which the learner must analyse and make meaning of information by using his/her personal observation and exploration. Hence, knowledge cannot be transmitted from one person to the other; it has to be reconstructed by each person. Following Shuell (1988, quoted in Kozma, 1994: 7),

> learning is not the receptive response to instruction's 'delivery.' Rather, learning is an active, constructive, cognitive and social process by which the learner strategically manages available cognitive, physical, and social resources to create new knowledge by interacting with information in the environment and integrating it with information already stored in memory.

In that respect how can television be employed for such objectives? MacMahon (1997: 89) raises the following question:

> Can we create programmes, which result in personal change through the use of the media, or does the technology limit us to the delivery of information and ideas about external realities?

It should be noted that external and inner realities do not exist in separate and isolated worlds, but rather have a strong influence on each other. From the cognitivist perspective, Vygotsky argues that,

> [children] transform external stimuli to internal 'codes' that are consistent with their own knowledge base by changing and modifying the original ideas, and applying their unique cognitive character to them (Ashman and Conway 1997: 96).

Educational television, with its one-way path of communication, seems far from the constructivist learning philosophy (although interactive educational television may change this in the near future). Taking a positive view, Koumi (2006: 105) notes that 'a constructivist would predict individual differences of interpretation of video sequences, depending on viewers' individual cognitive structures'.

Hoijer (1990, quoted in Koumi, 2006: 162) examined viewers' individual comprehension and cognition of television programmes. She concludes that

> it is a creative and constructive process whereby the viewer...uses her earlier knowledge and experiences as they are represented in her cognitive structures. It is in the light of what the viewer already knows that he or she interprets television discourse.

Moreover, Anderson and Field (1983: 57) reject the common belief that children's television viewing is passive. They believe that children are neither passive viewers nor 'hypnotized' by televised materials, but are rather 'cognitively active'. They emphasise that 'the child attends to those things that serve to further his comprehension and interests'. Adams (1990: 159) supports this argument and emphasises that

> contrary to popular belief, television is not automatically a passive (or mindless) entertainment device. Whether it is positive or negative in its programming, video imagery can be a stable object of thought for children on which they exercise their growing mental capacities.

According to such assumptions, even the transfer and shaping theories can account for conceptual activities. In all cases, however, educational television needs to capture viewers' attention creatively. Technology has to trigger and facilitate personal change and reshape meaning making of external realities.

In contrast, Crisell (1997: 124) argues that 'the students' abiding perception of the broadcast media as primarily intended for entertainment and leisure, and therefore to be consumed only passively'. Other studies (e.g., Sanders and Sonnad, 1982; Celsing et al., 1985; Salminen et al., 1988; Bell, 1987) also confirm that students look at educational television as a 'break from work' or 'as entertainment and fill-in, rather than as an integral part of teaching and learning' (Forsslund, 1991: 23).

This common argument raises questions about what happens to students when they are 'merely' listening to a teacher lecturing. In this way, the attraction of entertainment is also missing, which may cause even more passivity for learners. While passivity in a classroom can be avoided through certain activities (e.g., exploring and examining) and by communication between teacher and students, in television it depends on how the programme is made and employed and related to the objective(s) of a lesson. According to Forsslund (1992: 446), 'the contribution of educational television for schools depends very much on how the programmes are used'. For instance, schools television programmes can be accompanied with related follow-up activities and, ideally, children can also be encouraged to pursue answers to their own questions. Koumi (2006: 101) suggests that producers have to 'pose questions, encourage prediction, and...not mesmerise' viewers. In Koumi's view, this can 'encourage and enable sustained concentration' and creates 'active viewing'.

In terms of implementing learning theories for educational television, this study reveals that there is no solid procedure. Instead, flexibility in the employment

of different theoretical conceptions of learning can assist in the production of programmes. As Hancock (1971: 11) notes,

> it is clear that there is no single or simple prescription for the use of television in education. The variety of ETV services in existence is such that they cannot be reduced to a set formula: each case has to be examined, and assessed, individually.

Such a strategy allows programme makers to use a number of methods in order to provide appropriate knowledge, based on learners' circumstances and needs. However, in practice, the general structures of educational television productions—apart from interactive television technologies—tend toward pure transmission of information, which accords with behaviourism more than with other learning theories.

As indicated in Table 3-1, television has the potential to be compatible with different specifications of behaviourist and cognitive learning theories, more so than with constructivism.[5] Notably, as Gagné's conditions of learning, related in both two main learning territories such as behaviourism and cognitive theories, this study reassessed and examined the capabilities of such theory for designing, and evaluating the contents of schools television.

[5] The focus here is on traditional educational television and not interactive television, which may be capable of incorporating other learning theories such as constructivism in the future.

Table 3-1 Comparative summary of the definitions and specifications of the three major learning theories in relation to the potential of each theory for television

	Behaviourism	Cognitive theory	Constructivism
Definition	Learning occurs when new behaviours or changes in behaviours are acquired as the result of an individual's response to stimuli.	Learning happens inside people's heads and is a change in knowledge stored in memory.	Learning is a process where individuals construct new ideas or concepts based on prior knowledge and/or experience.
Specifications	1- Sequence of stimulus and response actions in the learner. 2- Transmitting fixed truths to students. 3- Measurable and observable response to internal or external stimuli. 4- Provide guidance for desired behaviour. 5- Can be applied for various training courses.	1- Students solve a problem rather respond to stimuli or learning certain skills. 2- Learners must comprehend meaning and integrate the knowledge into their own thinking. 3- Oriented toward deep discovery and creating. 4- Link new information to existing knowledge. 5- Use techniques to guide and support students' attention, encoding, and retrieval process.	1- Learning viewed as either individual or social knowledge construction. 2- Learners construct an exclusive individual description of reality from their own experience. 3- Learners' own perceptual activities, perceiving and conceiving. 4- Pose 'good' problems—realistically complex and personally meaningful. 5- Model and guide the knowledge construction process.
Potential of Television	All options.	Options 2, 4 (as part of learning activities) and 5.	Option 4 and 5 (as a part of learning activities).

3.7 Gagné's conditions of learning

Robert Gagné is well known as a behaviourist psychologist, but in the early 1970s he responded to new developments in psychology and shifted to a cognitive paradigm. Gagné defines his view on cognitive theory in the learning process as follows:

> It can surely be said that the acceptance of cognitive processing as an idea that must be dealt with in theorizing about human learning is a welcome change....In developing programs of instruction, one must solve the problems of lesson design and media selection by reference to mental states and mental processes, rather than simply in terms of behavioral outcomes (1980: 7).

Gagné and Briggs (1974: 64-68) believe that the components of learning may be divided into five major categories: 1) verbal information, 2) intellectual skills, 3) cognitive strategies (problem solving), 4) attitudes, and 5) motor skills, which depend on learners' internal and external learning conditions. For instance, in mathematic, knowledge of the relevant principles and rules, which exist in learners' minds is recognised as an internal condition. In Gagné's words, 'internal conditions include states such as attention, motivation, and recall of the previously learned capabilities that are relevant to the person's present learning events' (1970: 5). Events such as examples, guidance, feedback, and assessments, which are outside of learners' minds, can be identified as external conditions.

Gagné, subsequently developed his theory on the 'conditions of learning' and employed behaviourism and cognitive learning theories, and established learning events as practical guidance for instruction processes. This definition of the events of instruction created an important bridge between psychology and the structuring of learning experiences and environments.

3.7.1 The principles of instructional design

Gagné's instructional design theory provides a framework, which depends on desired learning outcomes (e.g., problem solving rather than subject knowledge) and is based on students' cognitive learning processes. As Gagnon and Collay (2001: 12) point out,

> [Gagné] suggested that instruction should be structured to involve problem solving and to ensure higher levels of understanding. He introduced a focus on learning outcomes instead of on objectives.

Gagné et al. (1992) identify nine events as principles of instructional design for classrooms:

1. Gaining Attention
2. Informing the Learner of the Objective
3. Stimulating Recall of Prerequisite Learned Capabilities
4. Presenting the Stimulus Material
5. Providing Learner Guidance
6. Eliciting the Performance
7. Providing Feedback
8. Assessing Performance
9. Enhancing Retention and Transfer

Gagné looks at the events of learning and instruction as a series of phases, using the cognitive steps of coding, storing, retrieving and transferring information. He argues that they are,

> the events that make up instruction for any single performance objective as they may occur within a lesson. These are the events that are usually external to the learner, supplied by the teacher, text, or other media with which the learner interacts (Gagné et al. 1992: 202).

Gagnon and Collay (2001: 12) also recognise these events 'that vary with specific content and the type of learning outcome achieved'. In Gagné's words,

> Each of the events of instruction is capable of supporting internal processes of learning. Unless such support is provided by the learner's own executive control, the presence of each event adds to the probability of successful achievement (Richey, 2000:116).

The followings will review and describe each event in detail:

Event 1: Gaining Attention

There are numerous things that a teacher can employ to increase the pupils' awareness, for instance at the beginning of each session, teachers grab learners' attention by delivering questions. These questions give background information and create validity, as Gagné et al. (1992: 190) note,

> Basic ways of commanding attention involve the use of stimulus change, as is often done in moving display signs or in the rapid 'cutting' of scenes on a television screen. Beyond this, a fundamental and frequently used method of gaining attention is to appeal to the learner's interests.

In fact, gaining attention establishes an interactive environment and enhances the relationship between teacher and students. This will even ensure the reception of future instruction given by the teacher to his or her pupils.

Event 2: Informing the Learner of the Objective

Learners have to be informed about learning objectives and what to expect from a session. This event, which is known as activating a process of executive control helps students prepare for the information. 'In some manner or other, the learner should know the kind of performance, which will be used as an indication that learning has, in fact, been accomplished.' It is important not to assume that students know the objectives of a lesson (Gagné et al., 1992: 191). The learning outcome must be communicated to the pupils comprehensively and unambiguously. In brief, this will ensure the pupils know exactly what they are doing and will keep both teacher and pupils on target.

Event 3: Stimulating Recall of Prerequisite Learned Capabilities

The main function of this event is to recall existing and relevant knowledge. Gagné et al. (1992:192) believe that 'component ideas (concept, rules) must be previously learned if the new learning is to be successful'. This is a major factor in the process of learning new information. Students' accessibility to some prior knowledge in the area is essential and supports the learning process. Stimulating the recall of prerequisite, learned capabilities in the learning process can be seen as the learning process based on the retrieval of prior learning to working memory that Gagné emphasises.

> [...] the most important condition to assure is that prerequisite skills be retrieved so that they are in the forefront of memory, in other words, prominently attended to in working memory. (Richey, 2000:116)

In fact such an event can be recognised as an enhancement of cognitive prerequisites, but it has to be noted that the recall of prior learning for intellectual skills, verbal information, cognitive strategy, attitude, and motor skills are not the same. For instance prior learning for verbal information is related to a larger complex of organized knowledge, than that prerequisite for intellectual knowledge.

Event 4: Presenting the Stimulus Material

The goal of this event is information achievement, when the teacher gives students step-by-step tutorials. In Gagné's definition, 'the stimuli to be displayed (or communicated) to the learner are those involved in the performance that reflects the learning' (Gagné et al. 1992: 193). In fact this event is considered to be the occasion for emphasizing or highlighting the distinctive features of what is to be learned. It

also has to be mentioned that such stimulus presentation requires the use of a variety of relevant examples through distinctive features, but each case of learning skill requires a different stimulus, Gagné notes,

> Distinctive features of printed discourse would appear to be key words and phrases, topic sentences, and the like. For intellectual skills, in contrast, distinctive features are likely to be cues of the *sequence of steps* involved in procedures to be recalled. For example, cues for the successive steps in long division are usually given emphasis in the stimulus presentation for this skill. (Richey, 2000:116)

The presentation of stimulus material in the learning process is all about emphasising certain features for very selective perception, hence such stimulus have to be selected cautiously, as Gagné et al. (1992: 193) note 'if one neglects to use the proper stimuli for learning, the end result may be that the learner acquires the "wrong" skill.

Event 5: Providing Learning Guidance

This event provides organization and relevance in order to assist semantic understanding and encoding. For instance depending on learners' status, the teacher can offer 'discovery learning' and let students explore the information themselves. However, the teacher provides relevant guidance and cues when needed and keeps the students on track. Providing learner guidance 'does not "tell the learner the answer;" rather, it suggests the line of thought, which will presumably lead to the desired "combining" of subordinate concepts and rules to form the new to-be-learned rule' (Gagné et al. 1992: 193). Gagné notes,

> In instructional design, learning guidance covers quite a lot of ground, depending on what kind of learning outcome is expected. In the simplest case, it can mean simply "hints" and "prompts," and thus be

> another way of providing proper cues. More generally, learning guidance means *organizing and elaborating* the content. These activities may be done by the instruction itself (as designed by the instructional designer) or they may simply be suggestions that they be done by the learner (Richey, 2000:116).

Learner guidance through the hints and prompts, or by questioning provides semantic encoding and cues for retrieval. In all circumstances they have to be adapted to learner differences and supply proper or relevant cues if they are to enhance learning process.

Event 6: Eliciting the Performance

The event of eliciting the performance is looking for the learner's response and students have to be able to demonstrate how much they have learned from the tutorial. Gagné et al. (1992: 196) define the event as follows:

> the learners will now be carried to the point where the actual internal combining event of learning takes place. Perhaps they look less confused, or some indication of pleasure has crossed their faces. They have seen how to do it! We must now ask them to show that they know how to do it. We want them not only to convince us, but to convince themselves as well.

In fact this event is a response to the objective of the entire learning process. The function of eliciting the performance at the minimum level is to verify that something has been learned. To do this, based on what has been taught, learners through the participation in the learning processes display their new attainment, and demonstrate what they have learned.

Event 7: Providing Feedback

Providing feedback creates informative response on the learner's performance. This refers to the regular and immediate feedback given by the teacher to learners as a response to their performance.

> One must be highly aware of the after-effects of the learning event and their important influence on determining exactly what is learned. In other words, as a minimum, there should be feedback concerning the correctness or degree of correctness of the learner's performance (Gagné et al. 1992: 196).

Giving feedback establishes reinforcement and enhances learning when students are able to find out the quality of their learning. Following Bigge (1982: 148) 'Reinforcement works because the expectancy established during the motivational phase when a learning set was established is confirmed during the feedback phase'. Teachers can provide positive response to the correct performance of pupils as feedback in various ways. However, it has to be mentioned that the aim of such communication is not merely to do with immediate educational content but also functions to improve teaching and learning processes.

Event 8: Assessing Performance

This event aims to evaluate learners' capabilities in applying what they learn and test their learning outcomes as Gagné et al. (1992: 197) note, 'the immediate indication that the desired learning has occurred is provided when the appropriate performance is elicited.'

> This is a matter that requires two different decisions. The first is, does the performance in fact accurately reflect the objective? [...] The second judgment, which is no easier to make, is whether the performance has occurred under conditions that make the observation free of distortion. As an example, the conditions must be such that the

> student could not have "memorized the answer" or remembered it from a previous occasion.

To do this, teachers apply various tests and questions in order to verify that the performance of a student is reliable and valid; they also have to be certain that learners' capabilities on subject matter are real. In fact assessing performance requires different learner performance, and gives feedback, to reinforce learning.

Event 9: Enhancing Retention and Transfer

Varied practices provide cues and strategies for retrieval and generalise pupils' learning capabilities. Accordingly the teacher sets different tasks to ascertain how students can use their new knowledge, Gagné et al. point out that,

> when information or knowledge is to be recalled, the existence of the meaningful context in which the material has been learned appears to offer the best assurance that the information can be reinstated (Gagné et al. 1992: 198).

Enhancing retention and transfer can reassure the teacher that students can retrieve learning materials in different circumstances. To do this, the teacher provides several new tasks for learners and asks them to create various activities using new applications, which are considerably different from those used for the learning itself. In addition, students will be encouraged to employ learning in real-life situations in order to master their learning.

Table 3-2 demonstrates a summary of the relationship between the nine instructional events and the learning process.

Table 3-2 Events of Instruction and Their Relation to Processes of Learning

Instructional Event	Relation to Learning Process
1. Gaining attention	Reception of patterns of neural impulses
2. Informing learner of the objective	Activating a process of executive control
3. Stimulating recall of prerequisite learning	Retrieval of prior learning to working memory
4. Presenting the stimulus material	Emphasising features for selective perception
5. Providing learning guidance	Semantic encoding; cues for retrieval
6. Eliciting the performance	Activating response organization
7. Providing feedback about performance correctness	Establishing reinforcement
8. Assessing the performance	Activating retrieval; making reinforcement possible
9. Enhancing retention and transfer	Providing cues and strategies for retrieval

Source: *The Principles of Instructional Design* by Gagné et al. (1992: 190).

By its very nature, television, with its moving pictures, accompanying sounds, music and audiovisual effects, would be able to deliver different sorts of motivational features to the viewers. Following Bates (1981: 81) "It is television's power to combine a wide variety of representational modes which makes it interesting. It is a very rich medium in its range of characteristics". Therefore, television is highly capable of gaining pupils' attention, informing the learner of the objective and presenting the stimulus. Following Moss et al. (1991: 7),

> ...television can be turned to educational advantage as a tool for instruction, a source of information and a subject matter in its own right. Children have a natural interest in and inclination towards watching television. This positive attraction towards the medium lends it a real potential attraction as a powerful learning source.

According to table 3-1, Television has the capability to employ various elements of behaviourism and cognitive learning theories. Hence, Gagné's learning events are equally applicable for designing, making, and evaluating the production of educational television. Westera's (1999) framework for audiovisual design, which is similar to Gagné's learning theories, also reinforces this potential. Westera (1999:

89) has defined principles, based on empirical evidence, 'for any pedagogic approach'. These are to:

1. prepare the learner;
2. direct the learner's attention;
3. provide learner participation;
4. provide feedback to the learner; and
5. provide repetition.[6]

This study will examine whether a combination of empirical principles of audiovisual design (i.e., MacMahon, 1997; Westera, 1999) and learning theories (i.e., Gagné's learning events) can be employed for producing reliable schools television productions and outcomes. Accordingly in Chapter 7 of this study, Gagné's nine events of instruction will be applied in the analysis of two samples school programmes from the UK and Iran.

3.8 Television production

The second part of this chapter concentrates on television production in both genres through a review of television grammar in relation to educational objectives. This review clarifies how components of production genres and the techniques of television can relate to appropriate learning theories.

Basically, the components of production for educational television are similar to those of mainstream broadcasting programmes; however, they must be adapted and harnessed for educational purposes. Education is in fact the unique characteristic of Schools Television and is embedded in the heart of production processes. Chien

[6] However, instead of 'repetition' more appropriate might be to consider 'review' or 'consolidation'. This implies a more interactive, less passive approach to teaching and learning. The National Numeracy strategy in the United Kingdom placed the idea of interactive teaching more firmly into the curriculum.

(1999: 197-8) distinguishes between mainstream broadcasting and schools television productions:

> As the main purpose of schools programmes is to help children learn from the action of watching itself, the pace and forms of programmes tend to be different from general/non-school programmes, especially those made for entertainment. That is to say, school programmes are usually slow, repetitive and modular in an attempt to make the messages clear and deliberate to the viewers.

Shepherd et al. (1967) found that mainstream broadcasting employs more cuts, fades, and camera moves per minutes than educational programmes do, and concluded that 'commercial TV is more "dynamic" in production'. For educational television the main purposes of the production have to be concerned decidedly, Wetzel et al. (1994: 111) note that

> the use of video production methods and techniques in instruction and learning has two goals: a) producing instructional video materials that meet general standards of technical quality, and b) using the capabilities of video to enhance learning.

It has to be said that although it is impossible to prescribe concrete rules for media productions of any kind—and such attempts can hinder creativity—'production factors are neither to be ignored nor put into a formula for mechanical replications' (Mielke 1983: 235). What makes the output of educational television different is indeed the balance between production criteria, and the educational objectives. Mielke (1983: 242) noted that,

> once the commitment is made to search for pedagogical rationales to employ all useful production variables, and once the difficulties of trying to establish generalizable production formulas are recognized, it is possible to do a great deal of constructive work in message design for goal-directed television programming.

Generally, audiovisual materials offer a variety of educational opportunities, which allow teachers to adapt material to the needs of their pupils. According to the definitions of QCA (2000), video and audio

a. allow pupils to experience places and people that it would otherwise be difficult or impossible for them to see;
b. make abstract ideas concrete;
c. can be used to demonstrate and analyse techniques and processes;
d. allow pupils to see and hear events and people from the past;
e. can motivate pupils to learn;
f. can help develop pupils' critical faculties ;
g. can stimulate pupils' imaginations;
h. can expose pupils to a broad range of aesthetic experiences;
i. can teach pupils about beliefs and values through real or fictitious stories or situations; and
j. can give pupils the opportunity to hear other people talk about their thoughts and feelings.

The contributions of radio and television to education can be identified in general terms such as stimulation, motivation, reinforcement, and enrichment for learning purposes. As Wetzel et al. (1994: 134) argue,

> [television production] techniques are intended to harness the ability of video to capture, hold, and focus the viewer's attention; to bring words, sound, and pictures to the viewer at the same time; to show movement; to present realistic visual images; and to create believable visual illusions.

In fact a wide range of television programmes in different areas can be implemented for educational purposes, but in all cases there are two important issues, which have to be considered. Firstly each type of educational programme requires a different structure; secondly the features of each element of the production of educational television programmes have to be clearly identified. Hence, it is necessary to find an appropriate balance between the two matters.

3.8.1 Genres of programmes

Television programmes can apply different techniques, deliver different genres such as fiction, factual (non-fiction), and edutainment, and integrate the capabilities of image, sound, and editing techniques for various purposes. These capabilities can also be employed widely for educational purposes.

Schools television in the United Kingdom employs a variety of production techniques to integrate technology into the learning process. Programmes are mainly delivered through forms of narrative or drama that has been reworked in the interests of educational objectives. They are mostly flavoured by a sense of entertainment and humour, as is reflected in the term 'edutainment' (e.g., '*Tweenies*' on CBeebies or '*The Hoobs*' on Channel 4).

3.8.1.1 Fiction (narrative–dramatisation)

Radio, television, and film are strongly rooted in dramatisation and narrative, which can also be employed effectively for educational purposes. These forms motivate and grab pupils' attention during the learning process. As Collins (1983: 126) remarks,

> dramatic television programs offer a panoply of social actions, events, and situations. In this respect, they are much like the real world in which children and adults live and also like the contents of other mass media.

In fact, storytelling and narrative structure are at the heart of the television experience. For instance, 'Sesame Street' is one example of a successful attempt to use narrative structure in educational programmes. According to Madej (2003: 8),

> children's educational television and video narratives received their strongest boost when the Sesame Street series developed its 'great stories, lots of fun, and good learning' programming in the late 1960s.

Morris (1984&1988) and McCullagh (1986) learned that dramatisation produces better learning and is more effective than live lecture presentation. Kazem (1960, quoted in Wetzel et al. 1994: 136) also emphasises the influence of dramatisation in comparison to televised presentation that uses no other visual materials. Holland (2000: 115) believes that

> all programmes depend on a relationship between the visual image and the flow through time, and the narrative structure is a powerful way of organising that flow.

According to chapter 2 of this study and based on Fisch's capacity theory, when the distance between narrative and educational content is large, the mental resources needed for comprehension are generally devoted primarily to the narrative; fewer resources are available for processing the educational content. In this case, educational materials would be tangential to the narrative and distance (*d*) between the educational content and narrative would be large. He argues that for an effective educational television production, the narrative should be integrated with educational materials so that the distance between the two would be small. As a result, the programme will ultimately provide better comprehension (for more details see Chapter 2).

However, it has to be noted that in terms of audience concentration and understanding of educational content, some studies reveal that the tendency is on more direct and simpler television production formats, rather than narrative.

In the United Kingdom, concerns about using dramatisation for educational broadcasting have a history as long as educational broadcasting itself. For instance,

when Mary Somerville (Director of BBC Schools Talk from 1931–47) joined the BBC in 1925, she quickly recognised that radio had more potential for educational purposes and that it could be employed to supplement mere talk (Cain and Wright 1994: 19). In another example, Rhoda Power, a pioneering radio teacher in the early days of BBC educational broadcasting, made the best possible use of 'story telling' in school broadcasts for history programmes in the late 1920s. However, this structure of educational production ran contrary to the initial ideas of people like Stobart, Director of BBC Education from 1924–33, who argued that broadcasting learning materials 'must always partake of the nature of a lecture' (Briggs 1995: 192).

These fears that too much drama will dilute educational objectives and cause misleading or interference are still maintained today. Olley (2003) notes that:

> [for watching a school television programme] it is important that the context itself must be ignored. If students are amused by the context then they will not be alert to the argument that follows. They must ignore the context in order to orient themselves to the subject matter.[7]

Dramatisation, like other production formats, has to be employed as a vehicle for educational content. More importantly, programme makers have to 'prevent the viewer from becoming aware of the techniques being used and lead the viewer to accept what is shown on the screen as being natural, logical, and realistic' (Wetzel et al. 1994: 111); also Deighton et al. emphasise that dramatization also relies partially on creating an emotional response as a way to persuade the viewer to accept the intended message (1989, quoted in Wetzel et al. 1994: 137).

[7] Chris Olley, Educational Consultant of The Maths Channel, (author's personal correspondence via email received 22 November 2003.

Other views emphasise that students do not have to be hypnotised by the entertainment contents of a dramatisation, and that it has to be interrupted from time to time in order to jolt pupils to think about main educational objectives. As Koumi points out,

> unlike pure drama, which can succeed if it totally immerses the viewer, in education many viewers need to be encouraged to stand back a step from the illustration and appraise its underlying message, especially if the illustration is particularly dramatic (1991: 146).

Such a strategy creates a sectional production structure, which is against the tradition of dramatisation (i.e., continuous deliverance with a beginning, middle, and end) and reinforces the delivery of main educational objectives more straightforwardly.

In the process of educational television production, the employment of dramatisation has to be well justified and the delivery of educational contents should be enormously accurate in order to convince pupils. Otherwise, they argue against the intended content. In fact, the producer's talent is channelled into knowing how to use dramatisation as a part of televisual material and balancing it with educational content.

3.8.1.2 Factual (non-fiction)

For schools television, the factual, non-fiction documentary provides pure views of educational events directly to pupils and carries with it suggestions of objectivity and hard evidence. As Kriwaczek (1997: 9) says, 'the medium of film or video, of photography itself, has a special place in the representation of truth'. In general terms, as Fowler (1965) emphasises, '[documentary is] almost any non-

fiction production, which aims to say something about the real world'. Thus, the factual genre creates sequences, which have their own particular character.

There is a strong and inseparable link between education and facts. For instance, in geography, teachers convey a variety of facts (e.g., detailed information about a country) to pupils. In mathematics, understanding definite rules and formulas and their relation with the real world constitutes the entire learning goal. In such a didactic tradition, educational television can apply factual genres to represent realistic and natural models. Although from the behaviourist perspective factual genres seem very close to educational objectives, simply delivering facts and evidence may dramatically reduce pupils' attention. For instance, BBC education and Channel 4 Learning employ a combination of factual and fictional genres, which are both entertaining and educative.

3.8.1.3 Edutainment and the role of humour

Television is central to entertainment, information, and education. Each category has an occasionally indistinct boarder with the others. For instance, a programme might be informative and entertain or educate viewers at the same time. In educational television, however, the important distinction between educational and mainstream broadcasting is the way that entertainment is used in the programmes. The main aim of commercial television is to have a high number of viewers and sell airtime to advertisers; hence entertainment plays a vital role in the achievement of such objectives. In contrast, schools television in general and in the United Kingdom specifically is not linked to commercials. Licence fees fund BBC Education and, like

other BBC programmes in various channels (except BBC World)[8], it is commercial free. Channel 4, which is an independent company, is also not allowed to broadcast any commercials before, during, or after its school programme services. Hence, entertainment for BBC and Channel 4 schools television has another function, as it was created to be relevant for educational purposes.

Programmes are mainly delivered through narrative form or as dramas that have been restructured to meet educational objectives. They are primarily based on a combination of education and entertainment and are thus called 'edutainment'. In Stevenson's description, 'it's about creating a bridge between the two forces of entertainment and education' (2001a: 3). Richmond (2000) believes that 'if we don't entertain, we don't teach,' and Thrikell (1997: 177) argues

> we believe that we can make information and learning entertaining, and this can encourage people to go off and find other information, stimulated by the programmes.

Skelton (2001: 1) believes that edutainment is 'the successful integration of education into the entertainment environment of television'. According to Miron et al. (2001) 'humor can promote vigilance and, thus, learning from television.' The producers of schools television programmes therefore regularly use features of entertainment and humour in an attempt to merge educational content and entertainment to attract the viewer's attention. However, it has to be mentioned that the balance between entertainment and educational materials is very crucial. As Bryant et al. (1983: 224) note, 'the limits to placing humorous stimuli need to be recognized'; otherwise it will interfere in the learning process. In Stevenson's view,

[8] BBC World is the BBC's commercially funded international 24-hour news and information channel broadcasting around the world from its base at BBC Television Centre in London.

> whether you regard this as education by stealth or simply ensuring that entertainment is not mindless, it's an important aspect of [BBC Education] services for children (2001a).

The function of edutainment can meet some of Gagné's instructional design principles such as gaining attention and presenting stimuli. For instance, Anderson and Field (1983: 86) mention that humour increases pupils' attention and learning. Lesser (1974) emphasises that humour works as a 'facilitator,' which determines the success of the programme in attracting pupils. Bryant et al. (1983: 273) also believe in humour and special effects (e.g., fast pace) as facilitators for gaining pupils' visual attention, which provide 'the winning combination'. Sharp (1995: 182), who examined various features of schools television in the United Kingdom, asserts that

> if pupils find a programme interesting and entertaining, they will be better motivated to devote the mental effort required to learn from it. The research has found that it is the combination of attractive content and features into a coherent structure, which helps pupils to learn.

According to Sharp (1995: 127), 'children and young people liked the use of humour in the programme, as long as this was appropriate to the context, tailored to their age group and not over-played'. Some studies reveal that the effects of humour in educational programming depend on pupils' age. Humour is more effective with young children, but its influence decreases, as viewers get older. For instance students in colleges and universities would like to receive information more directly and specifically. Wetzel et al. (1994: 145) point out that,

> the use of humor in instructional television is...most effective for young learners, [...] becomes increasingly ineffective as learners grow older, and...its effect is negligible for older adolescents and adults.

As mentioned earlier, educational programmes in Iran are delivered more directly and, as the structure of productions is formal and similar to real-life classrooms, there is little use of entertainment or humour. It also should be added that most of these programmes are not recorded by schools and it is assumed that pupils can watch them at home. This means that school programmes in Iran have to compete with mainstream broadcasting in order to attract pupils' attention. Bryant et al. (1983: 244) emphasise that,

> the findings show that non-entertaining educational television is likely to compete very poorly with other programs, especially with entertaining ones, whenever the respondent is free to choose from several available offerings.

In such circumstances, when pupils at home are free to choose the channels they watch, the programme undoubtedly has to be very interesting viewing as Thrikell (1997: 177) emphasises,

> if you do not entertain your audiences, if you do not attract them using all your skill and the tricks of your trade, you lose them. Particularly in that multi-channel environment, which we are hitting now, we have to make entertaining programmes that people want to watch. [Viewers have to] feel they are getting something extra from our programmes, they feel they are both entertained and informed.

Noble (1975: 186) also argues that a combination of humour and information is important for educational programmes' popularity and emphasises that 'learning can indeed be fun'. He believes that 'children learn best by watching and doing rather than by being instructed'. Following this view the style of both producing and delivering educational television in Iran can be problematic.

3.8.2 Production Features

The second factor of educational television is a review of the components of production feature such as audiovisual and pace. A valuable television programme is a well-balanced combination of sound, image, and editing. The functions of sound and picture in television 'refer directly to actuality, to establish context, to interpret, to imitate, to identify, to recapitulate, to couple, to interplay' (Millerson 1961: 210-11).

Meringoff et al. (1983: 51) emphasise that 'television offers visual as well as verbal information, and these dual sources may reinforce each other or compete for children's attention'. As Bates and Gallagher (1977) note, 'the student has to deal simultaneously with two channels of communication: vision and sound'. Also, Millerson (1999: 431) emphasises the variation between eye and ear in getting information from audiovisual media:

> The eye can maintain a quicker pace than the ear. While the eye can assess, classify, evaluate almost immediately, the ear has to piece together consecutive sounds to interpret their overall meaning.

Hence, producers and directors—especially in the educational arena—have to consider each component of television's capabilities, limitations, and differences very carefully. They have to constantly be aware of the effects of production features: sound, image, and editing patterns. All of these features in addition to educational contents should be considered equally important in the creation of high-standard schools television programmes.

3.8.2.1 Sound

All verbal and non-verbal auditory materials such as narration, monologue/dialogue, music, and sound effects can be identified as sound resources for radio, television, film and multimedia. Television essentially provides visual experience, but the importance of sound should not be underestimated. It is an important part of television programming, a key channel of information, and a main characteristic of schools television; as Bates and Gallagher (1977) mention, 'in many case study programmes, the sound track provides the main source of "academic" information'. Both sound tracks and images have varied functions and play a crucial role in educational purposes as Wetzel et al. (1994: 133) note:

> audio tradecraft rules are as important as the visual rules...but may be more important for the instructional developer insofar as the audio channel is a major source of information and content.

Sound can express various meanings and add different effects to television programmes. Sharp (1995: 130) in her research found that 'aspects of sound were important in creating atmosphere and conveying meaning'. Sound would be able to provide information, increase excitement, or create different a rhythm or tempo for the shots. As Zettl (1990, quoted in Wetzel et al. 1994: 128) emphasises, 'sound can be used to create continuity across shots'. In contrast, if programme makers employ unjustifiable asynchronies of sound and video, 'young children may either not attend, or just attend to the video' (Anderson & Field 1983). Millerson (1993: 156) also emphasises,

> Sound does not simply accompany pictures. It contributes subtly to their effectiveness. Through music or sound effects you can create

> illusion; suggesting a time or place, a situation. You can build up a mood; suggest foreboding, horror, [and] comedy.

The main sources of sound in television are the human voice (dialogues, monologues, and narration), music (background or environmental music), and sound effects.

The human voice: monologues and dialogues

The human voice is an important part of soundtrack resources for all audiovisual media, including television. In fact, part of the skill of producing/directing is knowing how to use all materials in creating a programme. For instance, fictional stories are mainly delivered by the human voice (actors and actresses), while in non-fiction the narrator is normally responsible for supplementing the visual information. For educational television more specifically, the function of the human voice as the main source of information is vital.

Various forms of the human voice such as monologue, dialogue, and narration can be applied for educational purposes as well as for mainstream broadcasting. For instance, information can be provided by monologue, which is a long speech made by one person in front of a camera (e.g., a newsreader). Dialogue, on the other hand, delivers conversation and presents communication or discussion between groups (e.g., interviews, discussions, or fictions). Narration is another way of using the human voice; here, in contrast to the other styles, the source of sound is absent from the screen.

Lecturing, also known as the 'talking head,' is a monologue form of the delivery of human voice on television, especially for informative and educational

purposes. The lecturing format is the most favoured production structure among institutions, which either makes low-budget programmes or that are unable to harness the appropriate capabilities of media for educational purposes. Such programmes simply deliver information directly to the audience, which is very close to MacMahon's (1997: 87) transfer theory:

> This is one which is very familiar and which is probably the easiest, and least challenging, for television production. It is primarily concerned with the 'facts' of a situation and with the transfer of information, usually from an 'expert' to the students.

According to constructivist theories, a teacher should not attempt merely to impart information to a group of learners and expect them to understand. Instead, the teacher has to be aware of each learner's concepts and learning strategies and then helps them to restructure their concepts (for example, by asking clarifying and provocative questions). Mielke (1983: 237) emphasises that,

> in a McLuhanistic fashion, the content of early ITV (Instructional Television) was traditional classroom instruction, reminiscent of early cinematographers planting their cameras in front of the stage to film plays as the content of early movies, giving everyone a front-row-centre seat. In neither case was the potential of the medium exploited.

In the early years of BBC educational radio broadcasting, lecturing was the only method of delivery. Very soon, however, the values of other capabilities of radio were recognised, and three decades later television programme makers created various indirect messages for learning materials.

Educational broadcasting in Iran, by contrast, delivers learning materials more directly. In fact, lecturing and the 'talking head' are embedded in the heart of educational productions in Iran. This is contrary to the primary function of Schools

Television in Britain, which is to try to 'enrich' rather than 'direct' teaching (Fawdry 1974: vii).

However, like other techniques in television production, there is no concrete rule for determining the style of educational programmes; hence, the implementation of direct or indirect teaching depends more on learning objectives and learners' circumstances. For instance, Nugent et al. (1980: 37) found that the authority/model format was the most effective for both learning the material and in viewer appeal for a group of college-level chemistry students, while McCullagh (1986, quoted in Wetzel et al. 1994: 136) emphasises that 'dramatization also appears to be more effective in presenting affective attitudes than direct expository presentations using on or off-screen authority figures'.

Salomon (1977) believes that there are differences between 'a televised lesson,' which is a direct transformation of learning materials to a learner, and a 'television lesson,' or as he described it, 'a lesson, which makes use of whatever uniqueness is offered by the medium'.

The human voice: narration

Narration, which is used widely in schools television programmes, provides verbal material. However, it can also be employed dramatically in fiction, even though it generally belongs to factual and learning territories. In the context of schools television, during the pre-production process while the overall structure of programme is being shaped, the production team decides how much material has to be conveyed by the human voice.

Different narrative techniques play important roles in educational television and therefore must be considered. These include on or off-screen narrators, the characteristic of voice, the use and emphasis of words, the speed of speech, the space between sentences, and the 'relative reading level and complexity of the verbal material' (Wetzel et al. 1994: 156). The influence of verbal information such as narration depends on the narrator's status; if the narrator is a recognized and recognizable authority on the topic, his or her on-screen presence might add to the credibility of the message (Barrington 1972; May & Lumsdaine, 1958).

For educational purposes, the speed of the delivery of narration is very important. Travers (1967, quoted in Wetzel et al. 1994: 156) points out that 'too rapid a presentation results in a loss of comprehension, and some loss may also be associated with too slow a rate of delivery'. It also has to be noted that overloading programmes with narration decreases pupils' concentration, hence, producers have to balance the material and break down verbal information by use spacing between sentences in appropriate places. On some occasions, the space between sentences can have an interactive function. For instance, in an Iranian primary school science television programme titled *Hawa* ('Air'), the voice-over is deliberately interrupted for few seconds in order to get pupils' reactions on questions raised in the programme.

Music

It is mentioned earlier in this chapter, although words in educational television convey the main learning contents, appropriate implementation of music also would be able to enhance the processes. Jaspers (1991: 48) notes 'as non-verbal material,

music provides fundamental emotional elements such as rhythm, tempo, volume, and orchestration. Some studies reveal that these can have a positive influence on pupils' attention in educational television (Davidson & Powell 1986; Wakshlag et al. 1982). Following Jaspers,

> it is clear that music is important in instructional audio-visual material. As every sound does, it attracts attention and directs perception. Used as an opening sequence it collects and focuses the awareness of the audience. And it sets a shared mode (1991: 50).

One of the well-known functions of music in television is to attract attention at the beginning or end of programmes. In schools television, a short and fast piece of music normally emphasises certain topics or events repeatedly, which provides aural conditioning. As Jaspers (1991: 50) says,

> some musical theme identifies a certain personage or event in the presentation, and every time this theme is heard, it acts as an anticipator or identifier.

Whether the employment of music for schools television facilitates the learning process or not, producers believe that they have to follow the mainstream broadcasting structure and 'entertainment culture'; otherwise, pupils may find the programme out of fashion (Seidman, 1981). However, and beyond this stereotypical model of television production, pupils prefer to watch moving images associated with music. For instance, Wakshlag et al. (1982, quoted in Wetzel et al. 1994: 143) found that

> given a choice, students were more likely to select and watch a short educational program when it was accompanied by music with a fast tempo and an appealing melody, rather than when the program was accompanied by slow, unappealing music, or by no music.

Using appropriate music for schools television programmes may not effect learning, but as Jaspers (1991: 48-50) argues, it is quite possible that 'ill-chosen music damages the learning process.' He emphasises that 'music that does not give the student occasions for identification or empathy has no function at all or it is distracting and disturbing'.

Background Music

Background or environmental music can be applied to television programmes independently or associated with verbal forms such as narration, presentation, and dialogue. In both cases, background music can either add emotion and rhythm to a television programme or just fill the silent spaces between words. Boltz et al. (1991) found that background music affected the recall and recognition of elements in short dramatic video clips. Also, the continuity of the musical line is thought to unify individual shots into a single scene.

In educational television, background music can be an effective means of improving pupils' perceptions of a programme's environment and altering certain aspects of their attention. Marshall (1988) points that '[background music] often provides a tone or an emotional attitude toward the story and/or the characters depicted, and also foreshadows a change in mood'. Overall, these structural elements, styles, and speed create an enjoyable atmosphere for pupils. However, background music can be defined as music, which is intended to be heard, but not listened to.

Background music also has also the capability to create a conditioning environment. According to Marshall (1988),

> background music may aid viewer understanding by linking scenes. For example, a particular musical theme associated with an individual character or situation may be repeated at various points in a film in order to remind the audience of salient motifs or ideas.

This function can be employed for educational purposes. For instance, it can be used to fulfil some of Gagné's principles of instructional design (e.g., gaining attention or stimulating recall of prior knowledge or learning).

Sound effects

Sounds or noises that emphasise the atmosphere of a place or create emotional meaning are known as sound effects. They might be employed along with visual materials as synchronies or asynchronies to provide a certain atmosphere. Following Fisch (2004: 32) "apart from conveying meaning and promoting comprehension, music and sound effects repeatedly have been found to capture children's attention and to contribute to the appeal of television programs". He also found that the influences of music and sound effects might be stronger when they are associated with relevant visual materials:

> [Music and sound effects] have been found to be particularly effective when they signal the arrival of a familiar character or program element, or when the music is lively and has a fast tempo. However, to sustain children's attention, they also must be carefully integrated with other appealing features; for example, consistent with the data on visual action...music may capture attention but probably will not sustain it if the visual that accompanies it is static (Fisch 2004:21).

According to the findings of Sharp (1995: 130) sound effects for gaining attention are generally very effective, especially in the programmes for younger children. Sound effects also would be able to provide conditioning, which pupil can

distinguish a sequence from the other part of the programme (e.g., opening sequence of the programme, or for a specific signal like pause the tape for questions).

3.8.2.2 Image

The main aspect of television is well known as a system for reproducing on screen visual images. In fact in addition to audio, visual features are the other channels of communication in television. More specifically visual features aid pupils understanding and retention of information, and also support innovative teachers with creative methods for the whole learning process. The benefit of schools television is its ability to provide visual elements for teaching. Such capability can convey the concepts of learning much better, and could give pupils access to experiences that would be difficult if not impossible for teachers to provide in any other way (Anderson, and Field, 1983; Sharp, 1995). Science demonstration in time-lapse or slow motion for example, can be recognised as extra learning materials, which enhance learning, and bring excitement and fun in to the classroom. Sharp (1995:131) also found out that 'children commented on a wide range of visual aspects, [... and] were relying on the pictures for a great deal of information'.

The main sources of visual features in television are the camera features, graphics, animation, and visual effects.

Camera features

Camerawork presents the content of programmes usually to their viewers, but all decisions concerning camerawork are creative choices on the part of the director and / or producer. For instance the size of shots (close-up, medium shot, etc), physical movement of camera (pan, tilt, etc), and optical movements such as zoom in

and out can provide different levels of motivation and understanding for schools television. Sharp (1995: 181) discovered a relation between the size of shot and understanding of the content of the educational programme,

> In the NFER study, sequences using close-up were associated with heightened attention, and were also found to be helpful in pupils' recall and understanding of the programmes. It may be that the way in which the technique was used was an important factor.

Features of camerawork like moving from one position to the other, changing the angles, the size of shots, or zooming and showing details of the subject can bring excitement as well as information for the viewers. However, following Wetzel et al. (1994: 115) 'any movement should be slow enough for the viewer to understand the changes on the screen' and more importantly as Zettl (1990, quoted in Wetzel et al. 1994: 115) emphasises, 'under most conditions, the movement should not call attention to itself'. In fact the functions of the features of camerawork and other audiovisual techniques have to be in relation to the educational purposes rather than mere television production.

On the other hand educational producers and directors have to be very careful in using any televisual techniques, which lacks of viewers' experience may cause misunderstanding. For instance, while Sharp (1995: 181) emphasises 'close-up photography was found to be helpful in adding recall and understanding, even among the youngest age-group, a research by Clark and Salomon (1986, quoted in Sharp 1995: 181) revealed however 'an understanding of the function of 'cut to close-up' is necessary for learning from close-up images, some children may experience difficulties in learning from programmes using this technique'. In fact, camera features like other audio, visual, and editing techniques for school programmes have

to be implemented for developing the process of learning. Accordingly, planning and designing of programmes should be based on pupils' experiences and understandings of the technical functions rather than adding more tasks.

Graphics

Graphics in schools television provide potentially influential ways for learners to interact with the visual knowledge represented in the programme. In fact graphics illustrate the educational contents for pupils, as they are in print, however, television with its technical capabilities would be able to add various possibilities for the information transactions and enhance the learning processes. Emery (1993: 21) notes,

> Well-designed graphics are essential to the success of any multimedia product. While graphics play a powerful role in affecting the learning process, it remains a challenge to design meaningful images that convey information comprehensively to a chosen audience. Graphics strengthen instructional messages by adding dimension and clarity to a concept, but also have the potential to distract and mislead learners by conflicting with the intended message.

For instance, texts as a form of graphics in schools programmes have to be designed very clearly and also have to be displayed appropriately. A great deal of text on the television screen is very difficult to read and the quick display of texts will damage understanding of the programme in the viewing pupil. On the other hand using texts as graphics in educational television has to be designed and implemented creatively. Simply putting texts on the screen without exploring the unique potential of television cannot be recognised as extra value for schools television (e.g., *'Animals & Plants Similarities and Differences*).[9] A presenter (Peter Holden) in a

[9] Science programme for KS2, produced by Nick Salmon, a Granada production for Channel 4 [Learning], 1998.

garden talks directly to the camera, and at the same time texts such as growth, movement, nutrition, respiration, excretion, reproduction, and sensitivity appears on the screen, much of the potential in television education is neglected in such items. In contrast *'Experimenter'*[10] employs attractive graphics and animation; for instance when XP,[11] with his funny glasses analyses and experiments on objects main educational content is relayed through graphics, text and animation. Here the graphical materials are strongly linked to television's capabilities and its attractions for pupils.

Producers of schools television can make use of the varied potential in graphics in their programmes and achieve the necessary levels of learning and understanding by bridging the gap between learners and the content of educational materials.

Animation

Animation offers fantasy, exaggeration, illustration of the imagination, and the creation of virtual worlds, which can be employed in different educational areas. For instance, it is to some extent able to recreate and simplify abstract concepts in complicated learning areas such as maths, where ideas are difficult to illustrate (e.g., '*Number Crew*' on Channel 4 Learning). Wetzel et al. (1994: 131) mention 'animated graphics are able to display visual representations of event that would be impossible to capture in the real world because of their scale, speed, or complexity'.

Animation, which is associated with very rich audiovisual features such as music, sound effects, and attractive pace, is one of the most powerful forms of motion pictures for educational purposes. Animation also provides imaginary

[10] Science television series for KS2 produced by Glyn Edwards at BBC Education, 1994.
[11] XP is a spoof alien character who is trying to understand science on earth.

environments that are able to provide educational material independently or in conjunction with other media such as graphics, photos, film and/or video clips. Wetzel et al. (1994: 130) note, 'in addition to the display of live motion, video can also display animated graphics to illustrate imaginary, theoretical, or inaccessible visual phenomena'; all of these issues are crucial for educational purposes.

On mainstream television, animations are recognised by children as an attractive source of entertainment, and in schools television animation's power of attraction can be widely employed. As animations are often designed to direct attention to key features of the material to be learned, they can play crucial role in schools programme (e.g., see *'Growing Plants'*).[12]

Visual effects

With new electronic technology there are many of visual effects available for producers and/or directors to employ in television programmes, among those, shot transitions such as cuts, fades, dissolves, and wipes are the classic examples.

Visual effects can provide various attractions for pupils but programme makers have to be aware of the functions of visual effects on education. For instance among novice programme makers there are strong temptations on overusing visual effects in order to overcome their lacks of educational understanding. But as Clark and Salomon (1986, quoted in Wetzel et al. 1994: 135) suggest 'instructional production techniques should be oriented to conveying comprehensible information rather than attracting attention' Sharp (1995: 175) in her research for NFER found,

[12] Science programme for KS2, produced by Paul Davis at Television Junction for Channel 4 Learning, 2000.

> Visual special effects were generally observed to be attractive, as were parts of programmes containing visual details important to an understanding of learning points.

In fact as visual special effects can dominate a programme's field of vision, they might interfere with the educational contents of schools television; therefore makers have to make rational links between the techniques they use and the educational objectives.

Presenter

The presenter is in the frontline of the television production, introducing, informing, and conveying the content of the programme to the audience. Audiences mainly do not assume a presenter is merely a member of the television production team but the owner of the programme and the only person who is in charge.

It is clear that such a position in television production is sensitive, and for schools television, it has to be noted that the role of the presenter is crucial. Presenters in schools programmes have dual responsibilities, on one hand they have to distribute televisual materials professionally, and on the other hand they have to deliver reliable educational contents. Therefore, there is an important decision whether the presenter for schools television should be either a professional actor or alternatively a teacher, both types of presenters bring advantages and disadvantages. Combes and Tiffin (1978: 63-64) note,

> In general, you can expect that the professional actor will be able to learn and repeat accurately a written script as word prefect as is necessary for a complicated production. His delivery will always be clear, and his studio discipline (his ability to stop and start and accept modifications) of a high standard. He will be able to take on such duties as reading the commentary to a film sequence and interviewing without difficulty. However, he is unlikely to be competent in

> demonstrating complicated pieces of equipment, as would be necessary, for example, in a science programme.

The other choice is the employment of a teacher as presenter, so called 'teacher presenter', who obviously can deliver the educational content genuinely. Following Combes and Tiffin (1978: 64),

> The teacher will not be as word perfect as the actor and he may need training in voice production for television. However, even though he may depart from the written script, he is less likely to make errors of fact in what he says than the actor who knows nothing of the subject.

Presenters, either professional actors or teachers are seen as a representative of the production team. Therefore their success or failure has a direct impact on the other segments of the programmes. When there is a need for having a presenter, the procedure of audition, preparation, rehearsal, and more specifically collaboration in the processes of planning would be crucial for a successful result. Good presenting based on a professional script and through various skills and delivery techniques make an excellent link between information and the real world, that pupils experience (e.g., *'Cats' Eyes'*[13] and *'Science Zone'* [14] by BBC Education).

3.8.2.3 Editing

All audio and visual features are associated with the rate of scene change, the length of dialogues, the rhythm of music and sound effects, the speed of the action and camera movements: the so called pace of the programme, as Wright et al. (1984, quoted in Kozma 1991: 193) defined pace is a characteristic of presentation – the amount of information presented per unit of time (i.e., scene and character changes).

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[13] Science television programme series for KS1 by BBC Education 1995.
[14] Science television programme series for KS3 by BBC Education 1995.

Mainstream broadcasting, especially programming for children, uses a rapid pace in its audiovisual elements in order to attract and sustain the interests of as many viewers as possible for commercial reasons. In schools television, however the attraction is very important, due to educational purposes the pace are normally slower than commercial television, Chien (1999: 197) notes:

> As the main purpose of schools programmes is to help children learn from the action of watching itself, the pace and forms of programmes tend to be different from general/non-schools programmes, especially those made for entertainment.

In fact viewers' judgment of a programme as being boring or exciting, repulsive or fascinating are based to a large extent on issues of 'pace'. Following Sharp (1995: 175) movement and action encourage greater attention while long scenes, lengthy speeches cause loss of attention and a lack of development. Sharp (1995:128) emphasises,

> In terms of pace, children criticised elements of programmes for being too fast or too slow. In general they wanted the speed of delivery to be tailored to the complexity of information being given. [...] However, children were frustrated by the fast pace in other programmes [...], which gave them insufficient time to focus in on relevant points and absorb information.

Wetzel et al. (1994: 137) also note that educational programmes have to employ a purposeful pace that is 'intended to give viewer time to digest and integrate the information as it is presented'.

As mentioned earlier in this chapter, the priority of schools television is in its educational objectives and not merely in its fulfilment of the criteria used to measure the quality of commercial programmes. Hence any kinds of techniques in the process

of television production should be reassessed for the learning purposes, Wetzel et al. (1994: 133) argue,

> Cutting and editing are important for both entertainment and instructional uses insofar as both require a logical development and exposition of the content, but are less important for instructional development when used for dramatic or aesthetic effects.

In fact there is a big challenge for programme makers to provide balanced televisual features like an accurate pace of editing that delivers the educational contents in a way that is simultaneously attractive to pupils and comprehensible and purposive

3.9 Conclusion

In this chapter I suggested that in order to create effective educational schools television it is necessary to examine learning theories and production factors, which the programmes are based on. I believe the study will illuminate the effectiveness of schools television. However such recognition is not a simple task as there is no concrete formula for either using learning theories or an array of television techniques in the creation of successful school programmes.

Further television production for schools takes place within a milieu made up of school commissioning editors and their production teams who mostly have been teachers, or have been involved with relevant educational areas. Moreover the key members of production team in the UK schools television have a vested interest in schools television, rather than other programming. Although it was observed there was no direct relationship between learning theory and schools television, overall programme makers are employing the UK national curriculum and QCA schemes of

work as the main guideline for their productions. In addition several freelance educational consultants and curriculum advisors assist the production processes.

In making a bridge between different learning theories and television production structure, four adapted theories, namely 'transfer', 'shaping', 'travelling', and 'growing' by MacMahon, were examined. Moreover for evaluating the contents of schools television and designing a model of production, throughout divergent schools of learning philosophies, I found Gagné's theory on conditions of learning very functional. Therefore Gagné's nine events as principles of instructional design, which are related to behaviourism and cognitive theories, were also reviewed.

In addition I located the main features that form the production values of educational television. Key to these in current schools programme practice is the role of the sound, image, and editing patterns. Both learning theories and production values as mentioned will be applied to the analysis of sample programmes from the UK and Iran but first I will outline a research method which developed over time through my involvement with schools television production in the UK and Iran, as a participant observer, field interviewer and through analysis of the programmes and social milieu of production and from questionnaires and personal interviews.

Chapter 4

RESEARCH METHODOLOGY

4.1 Introduction

This investigation has faced four broad areas of research, two in Britain in particular BBC Schools, and Channel 4 Learning, and two institutions in Iran: the Islamic Republic of Iran Broadcasting Education Network (IRIBEN), and the Educational Technology Centre (ETC). Accordingly the establishment and employment of appropriate research methodologies in meeting the objectives of the investigation were very important. For such a huge task with such wide areas of exploration this chapter will propose the rationale behind my case studies and historical research methodologies and review available sources to the investigation. It also introduces the research tools, and introduces various data collection techniques to support the approach to the details analysed in my case studies.

4.2 Background of the research

In terms of background of the research, it has to be stated that in spite of the fact that the Iranian people are overwhelmed by enormous numbers of television programmes and television is the most important form of entertainment as well as an informative tool, there is little evidence of research, written material or practical studies into television. For investigations into educational television, there are even less resources. In fact, over the past four decades of educational television in Iran, there have

been only a few reports to have addressed the issue. For instance, a series of report documents for the National Iranian Radio and Television (NIRT) conducted by Lusignan et al. (1975) and, Brekka (1976) for the first national Educational Radio Television of Iran (ERTI). These reports, which were undertaken by several experts at Stanford University, essentially tried to justify the establishment of adult educational television to broadcaster policy makers in pre-revolutionary Iran. And the other is a proposal for an education television network; drafted by Bijan Taheri in 1999. Although the latter is strongly relevant to this study, the document defined the issues very generally. However, this thesis employed such report documents and tries to establish and add original documents into the field. Due to the enormous lack of evidence, where even a simple history of educational television in Iran is unavailable, the research faced a great challenge in data collection. Hence, it was necessary to choose appropriate research strategies that could a) overcome such obstacles, and b) be capable of implementing various data collection techniques.

In contrast to this lack of material relating to Iran, in Britain, there are a variety of studies on educational broadcasting, including studies on BBC Schools and Education, ITV Schools, and a few reports on Channel 4 Learning's history and policy. However, it has to be mentioned that overall up to date evidence on approaches to the planning, designing, making, distributing, the process of evaluation of Schools Television programmes and their relation to the national curriculum were unavailable. Accordingly, I employed different data collections techniques, such as interviews, questionnaires, and

participative observations in order to support the hypothesis and address the central questions raised by this research.

4.3 Hypothesis and Central Questions

The hypothesis of this research is that a comparative and historical study and detailed analysis of the production criteria of Schools Television in Britain and Iran will provide IRIBEN and ETC with models that will assist them in identifying their inadequacies in different areas.

As mentioned already, due to the lack of previous investigations on such issues there are several questions, which have to be addressed either as central or as subordinate to this research. This includes questions such as:

- How has Schools Television in Britain historically and practically achieved a long-term high quality in its programmes?
- How does Schools Television in Britain meet the national curriculum needs of schools?
- How might Iranian television be able to produce quality school programmes?
- Why, despite adequate technical capabilities, budgets, and manpower at IRIB, is the overall quality of educational and schools programme in any form insufficient?

However, in order to clarify the central questions – as any research project should do – these questions can be extended to ask:

1) how does the quality of Schools Television relate to the theories of learning?

2) how and why can television production criteria be related to educational purposes?

3) how can the structure of Schools Television in Britain provide a compatible model for Iran?

Due to the nature of the study, overall, two research strategies – the analysis of case studies and of historical context – were employed to address the above questions.

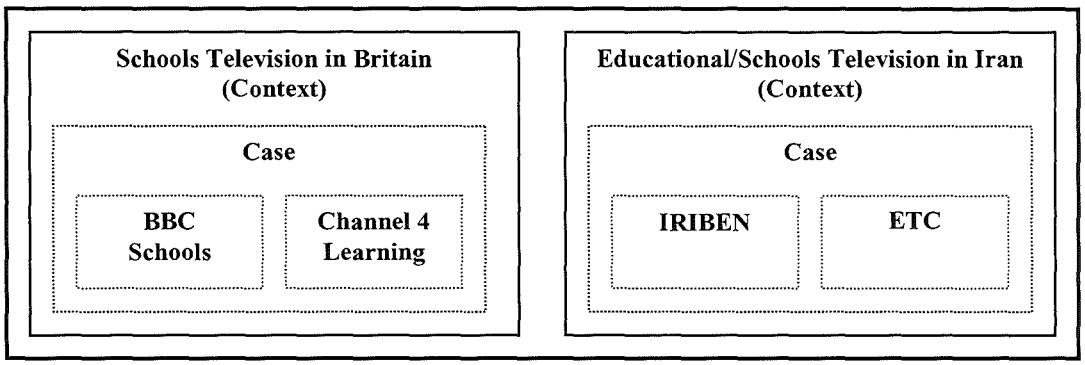
4.4 Case Study

The case chosen for this investigation can be identified as 'a unit of human activity embedded in the real world' (Gillham 2001:1), whose purpose is 'to describe and understand the phenomenon "in depth"' (Birley and Moreland, 1998: 36). Yin (2003: 1) also argues that 'the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena'. Here, the phenomena in question are the obstacles to the quality of educational/schools programmes in Iran and the capability of Schools Television in Britain as a compatible model.

There are four types of case study design used for both single and multiple case studies: single-case (holistic) design, single-case (embedded) design, multiple-case (holistic) design, and multiple-case (embedded) design (Yin, 2003: 39). When the study involves more than one case, the research has to employ a multiple-case design, either holistic or embedded. A holistic study would address a general aspect of a case, while a case study, which involves more than one unit of analysis, is embedded.

This study employs an embedded multiple-case study design. It looks at two cases of Schools Television in the British context and two of educational/Schools Television in the Iranian context (Figure 4-1). Each case is examined in detail, using a variety of units of analysis.

Figure 4-1 Embedded multiple-case study design



The extensive differences between Schools Television in Britain and Iran provide a 'contrast situation'. Hence, this study concentrates on contrasts and employs contrasting strategies as the rationale for investigation into developing compatible production models for the Iranian education network. Yin (2003: 54) points out that 'in this design, if the subsequent findings support the hypothesized contrast, the results represent a strong start toward theoretical replication'. In addition to the embedded multiple-case design, historical research and a detailed analysis of a sample programme from each institution also supported the central argument and the contrasting strategies.

4.5 Historical study

Historical study for this investigation provides essential information about the chronology of Schools Television in Iran and in Britain. For example, this study poses new questions about how Schools Television in Iran was formed and why it was suspended for nearly a quarter of century. Also, a broad review of the history of schools broadcasting in Britain (both the BBC Schools and Channel 4 Learning) revealed processes of improvement in services and achievements. Overall, the historical context illuminates the development and condition of Schools Television in Britain and Iran, both for modelling and for understanding obstacles and possibilities for future improvement.

4.6 Data Collection

Generally, data collection has to produce evidence relevant to the topic of the research and speak to the research questions (Birley and Moreland, 1998:41). Although the techniques may vary depending on the nature of the research, they have to be feasible and based on real circumstances. In case studies, the investigator has an opportunity to use multiple sources of evidence. Yin cites this as the most important advantage and main strength of case studies. He identifies six major sources of evidence for data collection in case studies: documentation, archival records, interviews, direct observation, participant observation, and physical artefacts (1994: 80). As each source has strengths and weaknesses, using multiple sources of evidence has obvious

advantages. For this investigation, data was generated from four main sources: a) review of the literature, b) interviews, c) questionnaires, and d) observations.

The nature of the multiple case-study methodology accommodated the fact that data collection for Schools Television in Britain and Iran required different approaches. For instance, due to the shortage of literature about the Iranian media in general and educational/Schools Television in particular, interviews and questionnaires were the most valuable techniques for data collection in this context. In contrast, there are many printed materials on different aspects of educational television in Britain. However, materials regarding schools productions, principles and models were limited. Accordingly, key interviews and observations were used to support the literature in this case.

This study thus employed a variety of research tools and techniques. The following sections describe the process of data collection in different institutions in Iran and the UK in more detail.

4.7 Review the Literature

Written materials are key sources for becoming familiar with the main topics and debates in any research study. Gillham (2001: 37) identifies the importance of written materials, even when one's own case seems to be unique, as follows:

> your case is so unique that you have nothing to learn from what other researchers have done or think. There can be no simple translation of their findings or theories but there will always be elements, which will sharpen your insight into what you are about.

Overall, the aims of the literature review in this study are as follows:

1. to understand the emergence and historical background of educational television in Iran and Britain;
2. to clarify the policies of television use in schools in different institutes in Iran and Britain;
3. to update information and raise new questions for research in progress; and
4. to establish a primary study on production models.

In this case, the review of relevant publications about Schools Television in Iran and the UK at the early stages of this study illuminated the subject matter and oriented the data collection processes as described below.

4.7.1 Publications on educational television in Iran

As mentioned earlier, one of the main problems in the Iranian media is the shortage of original printed materials. Media literature in Iran is primarily based on foreign sources, which are translated into Farsi.[1] Although these materials shed light on different aspects of media in theory and practice, they are largely irrelevant to the issues of Iranian radio and television itself. Hence, the IRIB's internal documents, newsletters, annual reports, programme evaluations, proposals and so on became vital sources of information for this study. However, narrowing the subject to a topic such as Schools Television in Iran limited the investigation even further. I therefore also collected other relevant information through a variety of types of documentation in different institutions.

[1] The modern Persian language, the official language of Iran.

During a two-month pilot study in Tehran in early 2000, for example, I collected printed documents from the IRIB Programmes Research and Evaluation Study Centre[2], the libraries at IRIB (Channels 1 and 2), and the reference section of the library of IRIB faculty. I also browsed relevant articles on educational/Schools Television in Iran at other institutions such as University of Tehran (Faculties of Education and Psychology, and Social Science) and the library of the Centre of Media Studies and Research.[3] *RASANEH* ('Media'), the *Quarterly Journal of Media Studies and Research in Iran*, was also reviewed for background theories and information about the Iranian media. There are a variety of monthly magazines that deal with educational issues, entitled *ROSHD* ('Growth'), with different subtitle topics, published by the Iranian Ministry of Education. This study benefited in particular from articles published on the use of technologies in schools, learning strategies and models in the *ROSHD Journal of Educational Technology.*[4] Similarly, the *ROSHD Journal of Primary Schools*[5] and *ROSHD Journal of Guidance Schools*[6] provided insight into different issues in primary and guidance schools[7] in Iran.[8] Moreover, due to the improvement of electronic databases in Iran, I was also able to access relevant documents in abstract or full-text form (e.g., news updates and reports, articles, and theses) through websites such as *IRAN*

[2] *Markaz_e Tahghighat, Motaleaat va Sanjesh Barnameh_ie_ye Sazeman_e Seda va Sima_ye Jomhouri_e Eslami_e Iran.*
[3] *Markaz_e Motaleaat va Tahghighat_e Rasaneh.*
[4] *Majalleh_ye Roshd_e Technology_e Amoozeshi.*
[5] *Majalleh_ye Roshd_e Ebtedaee.*
[6] *Majalleh_ye Roshd_e Rahnamaee Tahsili.*
[7] A three-year guidance period is equivalent to Key Stage 3 in England, for pupils aged 11 to 14.
[8] In 1972, as a reform of the Iranian Educational system, Guidance Schools were created and replaced the old system of the first three grades for secondary schools (cycle one). The education system in England provides four key stages of studies. Key stages one and two cover primary schools within eight years, while key stages three and four cover secondary schools within five years.

DOC,[9] *JAAM_E JAM* ('Magic Bowl [reflecting the world]') a daily newspaper of the IRIB, and the *HAMSHAHRI* ('Fellow Citizen') daily newspaper. In addition, colleagues in different institutes cooperated to collect and post materials, which were inaccessible through the Internet, including the IRIB's internal newsletters, bulletins, quarterlies, programme evaluations, annual reports, and some new studies from the Educational Technology Centre.

In the first stage of the study, it was vital to establish a comprehensive historical review of educational/Schools Television in Iran. This, combined with data collection, enabled me to make a complete profile of educational/school broadcasting in Iran that identifies the problems in detail. Hence, I reviewed all the relevant issues in *TAMASHA* ('Spectacle'), a radio and television weekly magazine published in pre-revolutionary Iran from 1972–79. I also traced the subject through post-revolutionary Iran in the same magazine, which was renamed *SOROUSH* ('Inspiration') since 1979.

The pioneer of educational/Schools Television in Iran was not Iranian radio and television but the Iranian Ministry of Education. Therefore, a review of materials and documents from this institution was also crucial. However, due to a shortage of literatures, I conducted interviews with key actors who were involved in educational television in Iran from its early days. I also explored the history of other institutions, which were involved with both independent and government-funded educational television production.

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[9] *Markaz_e Asnaad va Madark_e Elmi_ye Iran*, URL: http://www.irandoc.com

4.7.2 Publications on educational television in Britain

As mentioned earlier, because educational and schools broadcasting has a long history in Britain, I was overwhelmed by the variety of literatures on the subject. While accessibility to reliable sources was of great help for the general research purposes, finding particular information, especially on issues such as the principles of production and discussion of models, was considerably time consuming. Thus, in order to understand the two models of Schools Television in Britain (BBC Schools and Channel 4 Learning), I needed to conduct regular reviews of the relevant literature in order to keep up-to-date with new policies on educational productions, which are frequently affected by technological innovations.

Annual reports constitute one of the official sources for information about both channels and have been used in different parts of model making (e.g., budgets and number of programme productions). Quarterlies such as the *Journal of Educational Media*; *Journal of Educational Television* and *Journal of Educational Television and Other Media*; *Educational Media International*, and *Educational Technology*) were used frequently as sources of academic and scholarly evidence in order to understand the area under discussion in depth, raise new questions around the topic, and cross-reference in order to support the arguments.

The holdings of literature and documentation in the library of the Institute of Education (University of London) were a key source for the review of literature about Schools Television in Britain. Various sources such as reports, evaluations, speeches,

sample of videos and audiotapes for schools programmes in Britain were available for review.

A number of more specific sources were consulted for BBC Schools and Channel 4 Learning. These are described below.

4.7.2.1 Review the Literature for BBC Schools

In addition to the BBC Learning website and a direct email address for relevant enquiries, the monthly BBC Schools Newsletter emails registered users summaries of all new educational productions at BBC Learning for various age groups[10]. The information is accompanied by links to related websites for further details. BBC Schools Newsletters were useful for this study in two areas: obtaining general news about BBC Learning productions, and updating relevant information about maths at Key Stage 2 in relation to the sample programme analysed in this study, 'The Maths Channel'.[11]

Another important source of documentation for BBC Learning was the BBC Written Archive, which houses material primarily of an historical nature. Only pre-1980 files were open for research purposes here. This source of documentation enabled a review of the early history of BBC Schools broadcasting.

4.7.2.2 Review the Literature for Channel 4 Learning

In light of Channel 4 Learning's historical background, relevant literatures were mainly addressed to the ITV; therefore, there are few updated publications apart from

[10] The web and contact addresses: http://www.bbc.co.uk/schools/, schools.online@bbc.co.uk, schoolsnewsletter@lists.bbc.co.uk

[11] See Chapter 7

annual reports. Data collection about Channel 4 Learning and its schools services thus relied heavily on interviews rather than printed materials. Interviewees from Channel 4 Learning provided updated information as well as internal documents for this study.

4.8 Interviews

Yin (1994) argues that the interview is one of the most important sources of information for case studies. Interviews can be done in different formats, including open-ended, focused, structured and semi-structured. Although in open-ended interviews respondents are free to discuss facts and views about the subject under investigation, in most cases I employed focused interviews due to the time constraints of my interviewees. In this way I could properly control the length of the sessions with the number of questions. However, I occasionally made time for open discussion as well in order to, as Gillham (2001: 67) says, 'let the interviewee determine the answer and [not] indicate a preferred answer.' Although it was crucial to have all the questions answered during the interview, the views of elite interviewees provided new perspectives on the subject matter and raised questions for further investigation. In brief, the interviews assisted in the following areas:

1. collecting essential information on the history of educational/Schools Television in Iran;
2. understanding the policies and problems of the IRIB and ETC regarding educational productions;
3. obtaining access to first-hand and updated information on educational television in Britain;
4. focusing on investigating the topic directly and developing a clear view on educational production models and policies in Britain; and
5. collecting comprehensive and reliable data on educational television in Iran and in Britain, which were inaccessible by other data collection techniques.

Finally, following Yin (1994: 85), the 'interviews provided shortcuts to the prior history of the situation, helping the study to identify other relevant sources of evidence'.

4.8.1 Interviews in Iran

There are two main bodies involved with educational/Schools Television programmes in Iran: the Islamic Republic of Iran Broadcasting (IRIB), and the Educational Technology Centre (ETC). Interviews with people from these organisations therefore dealt with educational television programmes in both, as well as general education objectives through broadcasting and non-broadcasting materials.

The IRIB was an important site for interviews in areas such as the new proposal for the IRIB Education Network in 1999 and the inauguration of the channel in 2002, as well as the history of IRIB2 (the former Educational Radio Television of Iran from 1974–79) and its public educational services since 1979. The interviews also touched on IRIB4, which at the time of the pilot study was taking over educational duties from IRIB2 and making new policies for public educational programmes. On the whole, I conducted five interviews with key people from different channels and departments of IRIB and also benefited from the consultation of three experts via questionnaires, emails, and phone calls.

The ETC is the second important body for educational television in Iran and was also a valuable source for interviews. This centre, which is dependant on the Iranian Ministry of Education, has had a long background in the production of educational audiovisual materials for schools since 1966. As mentioned earlier in this chapter, the

ministry launched the first educational television in Iran; hence, interviews with people who were involved in this event contributed to the historical context of this study. Accordingly, I interviewed with four people at ETC. In addition, I conducted three more interviews and consulted with two people working in independent companies that make educational videos for schools, in order to learn more about their production model and obstacles faced.

4.8.1.1 Developing the interviews: overall problems

The ultimate objective of this study is to improve the quality of educational television in Iran and more specifically the IRIB Education Network. For this reason, data collected through interviews and questionnaires was designed to reveal the obstacles to IRIB services both generally and to its educational purposes more precisely. However, conducting interviews and surveys in Iran, especially in a socio-politically sensitive organisation like the IRIB, has always been a great challenge. In such circumstances, the appropriate design of questions for interviews and questionnaires became crucial. For instance there were some stereotypical answers, from those respondents, who were consolidating their professional position rather than disclosing their own ideas. To avoid these, alternative questions and cross-examinations were used to support the data. Overall this generated valuable and original material, which would otherwise be impossible to obtain through other data collection techniques.

4.8.1.2 Interviews via representatives

During the course of the study, obtaining new information raised new questions and it became necessary to contact people in Iran from time to time. Due to obstacles in making definite arrangements with some interviewees in Iran (e.g., availability or willingness to participate), which consumed tremendous time and travelling expenses, I appointed some representatives in Iran—my colleague's MA students—to conduct five interviews, for which I prepared the questions ahead of time. However, despite my careful and detailed explanations (and even a variety of interview instructions), the interviewees acted more like 'respondents' than informants. Although most of the representatives just conveyed the questions and did not follow the interviews process properly, the overall quality of data collection was good and, considering the savings of time and cost, and the value of updated answers can be regarded fairly successful.

4.8.2 Interviews in Britain

Much information about educational broadcasting in Britain was available from printed material such as literature, documents, research, reports and so on. For more specific information on production principles and models, however, as the material were limited,–it was necessary to make contact with those working in BBC Schools and Channel 4 Learning.

4.8.2.1 Interviews at BBC Schools

As BBC Schools broadcasting has more than an eighty-year history of educational radio and television broadcasting services, it was naturally the first source for

conducting interviews in order to understand the organisation's overall policies on standard educational production, planning for achieving targets, balancing entertainment and educational materials, use of learning theories and interpretation of their principles into programmes, and the appraisal of the production as an audiovisual aid at different stages. Interviews with key people at the BBC were an important shortcut to a variety of new information. Overall, five key people from BBC Schools were interviewed, and seven were consulted through questionnaires, emails, and informal discussions throughout the study.

Moreover, some interviews created extra opportunities within this study. For example, during one of my interviews with a BBC Schools producer, I was offered the opportunity to be a participant observer in one of the BBC schools productions in 2001. In another case, I had the opportunity to attend some crucial meetings of bodies such as the Educational Broadcast Council for the United Kingdom and the Primary & Secondary Programme Committee, which take place twice a year at BBC Schools.[12] These meetings encourage cooperation between the educational and broadcasting worlds and offer an opportunity to understand their needs, technologies and future planning. The other advantage of such interviews was being able to participate in an informal session at BBC Schools, the 'Lunch Time Programme Seminar', where the personnel of BBC Schools discuss the progress of ongoing projects. These opportunities contributed important data and experiences to the study.

[12] I attended in all meetings between spring 2002 and autumn 2005.

4.8.2.2 Interviews at Channel 4 Learning

Channel 4 Learning, the other institution providing schools programmes in the United Kingdom, is an independent broadcasting company. In fact, Channel 4 Learning took over schools programmes from ITV in 1992, and due to its long history of this type of service (even a few months older than BBC Schools Television), it was an important source of data for this study. Interviews with key people from this organisation firstly made up for the lack of printed materials about the channel, and secondly provided another opportunity to explore another production model for Schools Television in Britain. Overall, three key people were interviewed from Channel 4 Learning and two were consulted via questionnaires. Interviews with some people were conducted across more than one session, and data were updated through phone calls and emails on some occasions. The cooperation of some experts from Channel 4 Learning supported this study continuously at various stages.

I was again welcomed by interviewees working in different sectors at Channel 4 Learning and obtained important information about the channel's production model, the process of schools programme making, the roles of education officers, the relationship between Channel 4 Learning and educational authorities in the UK, and the process of evaluating proposals through the final programmes. As with the BBC, these interviews opened new avenues for this study. I was permitted to sit in on a session of programme assessment at Channel 4 Learning for a school programme from Yorkshire Television, and later was introduced to an independent production company 'Eagle & Eagle' and a co-commissioning Editor at Channel 4 Learning for further data collection.

Until September 2003, a board of experts at the Schools Advisory Committee (SAC) from Independent Television Commission (ITC)[13] evaluated schools programmes and is in touch with educational authorities in the UK, who mainly followed the same mission as the Educational Broadcast Council at the BBC. However, due to the confidentiality of the issues raised in SAC meetings, I was unable to attend any session or access the minutes of the meetings. Hence, the collection of relevant data was limited to formal ITC annual reports and responses to my individual inquiries from ITC, which clarified the SAC's policies and activities.

4.9 Questionnaires

Gilhamm (2001: 59) points that while using questionnaires in case study research is unusual, it can have a place in gathering simple, factual information. He says, 'the important point is not to be rigid about what you can or you cannot do in case studies. If one kind of evidence is relevant, or could be of value, then you include it'. On the other hand, if some parts of the investigation require answers to questions such as 'how much' or 'how many' as in survey and archival research strategies, questionnaires can be employed for data collection. Yin (2003: 6) indicates that case studies can be based on any mix of quantitative and qualitative evidence.

In some parts of this study, such as those focusing on Iranian primary and secondary schools, the initial comments of teachers on the function of Schools Television, the assessment of the quality of existing schools programmes, and teachers'

[13] Replaced by Ofcom (Office of Communications) since 29 December 2003.

current and future expectations and needs were collected by two sets of quantitative questionnaires.

Compared with interviews, I received more critical views about the IRIB from questionnaires in Iran. In contrast to interviews, in which interviewees answered controversial questions with reluctance (e.g., worrying about their profession within the organisation), or as Yin (1994: 80) says, the 'interviewee gives what the interviewer wants to hear,' questionnaires were capable of orienting respondents towards critical views. The anonymity of respondents is one of the strengths of questionnaire (Birley and Moreland, 1998: 45); in Iran, this was crucial for collecting important data.

4.9.1 Implementations of Questionnaires in Britain and Iran

I implemented a questionnaire data collection technique in various areas for this study, both in Britain and in Iran. For instance, in order to examine the 'educational' and 'production' values of 'The Maths Channel' as an example of Schools Television in Britain, I designed two different versions of questionnaires, and distributed them with the programme in both countries. For the case of Iran, the programme was accompanying by a Farsi version of the questionnaire; I also translated the script of 'The Maths Channel' and dubbed the programme into Farsi. Teachers and educational experts in Britain, and in Iran watched the programme and replied to the questionnaires and the data were used for the programme analysis in chapter 7.

This study also examined a sample educational programme from Iran, entitled 'Maths for Grade 4'. Fortunately, in terms of educational value, this programme was

already evaluated by ten Iranian primary schools and educational authorities in 1997. Such evaluation document saved considerable time, and I employed its results in different areas of this study. Moreover, I examined the production value in relation with theories of learning.

From both institutions, overall, 88 respondents participated in this investigation (some of them more than once) and answered a variety of questions about educational/Schools Television in Britain and Iran. The data collected by questionnaires provided different types of information relevant to the subject of this study. These can be summarised as follows.

First, Iranian primary and secondary teachers were questioned using two sets of questionnaires. The first set surveyed the general views of teachers on using television in the classroom, as well as their needs. The second set of questionnaires was designed for schools, which use educational videos on a permanent basis. In this case, the questions focused on the quality of Iranian productions and the necessities of more precisely revising the structure of educational programmes in the future.

Second, the points of view of educational experts and programme makers at the ETC, co-production companies, and IRIB were collected through a variety of questionnaires. These data provided original knowledge of problems within educational/Schools Television in Iran.

Third, due to the large number of questions, time constraints; travelling expenses and interviewees' crowded schedules, some interviews were replaced by qualitative

questionnaires. This strategy of data collection was most useful for Iranian institutions, as well as on a few occasions in Britain.

4.9.1.1 Using questionnaires instead of interviews

In addition to the above questionnaires and in some cases, time constraints and travelling expenses (especially to Iran), large numbers of questions, or busy respondents made it difficult to conduct interviews with important people. In these cases, I therefore decided to use questionnaires instead of interviews. Overall, six interviews in Iran, and four in Britain, were replaced with qualitative questionnaires, three of which included many questions and therefore required a few sessions. In addition, some respondents preferred to answer the questions at their own convenience. In this way, original knowledge about ongoing events in educational productions, the principles of management, and other facts about educational/Schools Television policies could be added to this study.

It has to be mentioned that the questions were designed to be independent of face-to-face communication. To this end, I used a variety of style of questions including open-ended, multiple-choice, and agreement/disagreement (Likert scale), as well as a variety of ways of administering the questionnaires. I tried to design the questionnaires carefully and unambiguously, but in some cases the answers were not as adequate as those given in interviews. For instance, respondents often left open-ended questions blank or gave very short answers. However, due to the restricted availability of the respondents, in most cases I would have been unable to have their replies otherwise.

4.10 Observation

Following Gillham (2001: 46), the power and validity of observation is that it is the most direct way of obtaining data. As Yin (1994: 87) mentions, it is also often useful in providing additional information about the topic being studied. He introduces two types of observation—direct and participant—which both enable the investigator to cover events in real time (reality) and cover context of events (contextual), as well as offering insights into interpersonal behaviour and motives (1994: 80).

For this study, it was essential to comprehend the organisation of television in Britain and the process of production in order to create a compatible model for Iranian educational television. Hence, data collection by observation covered different events, which were inaccessible in other sources of evidence.

From the early stages of this study I was looking for an opportunity to observe at BBC Schools or Channel 4 Learning. Fortunately, interviews at these two key institutions opened many doors. Following an interview with one of producers at BBC Schools, I was offered work experience in order to complete my data collection. I was officially appointed as an observer to a production team for a maths programme at Key Stage 2, entitled 'The Maths Channel'. Initially I expected to be a direct observer; however, in real production, I assumed different responsibilities, from making coffee to being a camera person, acting as an extra in some scenes, or being a member of a team

for a programme like '*Changing Rooms*'![14] Sometimes I looked for footage to include in the section about 'number place value' or did some office work. This style of observation is known as participant observation.

4.10.1 Participant observation

Yin (1994: 87) describes participant observation as an active process in which the observer participates in a variety of roles and is involved with events within a case study. This is a contrast to direct observation, where, although the observer can create opportunities for observation, he/she might be merely a passive viewer. As Gillham (2001: 45) argues, observation does not mean being a 'fly on the wall'.

During participant observation there are many opportunities for collecting case study data. In this study it provided close access to educational production and related events, while the information is original and first hand 'as it happens in real situation'. This allows the observer to interpret the events and data according to his own experiences without mediation.

Although there are many advantages to participant observation, there are also disadvantages. Yin (1994) points to the observer's decreased ability to work as an external observer, and to the fact that the investigator may become a supporter of the group or organisation being studied. In other cases, the observer may not have adequate time for note taking or questions due to his role in events.

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[14] The producer of the programme 'The Maths Channel' employed the style of a famous mainstream television programme on BBC1 channel entitled '*Changing Rooms*' for some maths topics such as shape and space, measures, and data handling.

This study has been affected by some of these disadvantages. For instance, due to different events and staff workload, there was insufficient time to raise questions about production issues. Instead, I covered these with a comprehensive questionnaire for the programme producer afterwards. Another problem was that I had supported the organisation since the early days of this investigation and it was very difficult to separate the study of its production from the valuable history of the BBC in schools broadcasting in order to make critical remarks. As a landmark of the educational production model for the Iranian education network, I had a tendency to support BBC Schools and Channel 4 Learning. However, through the process of observation and analysis of sample programmes, the study became more independent from the influence of British broadcasting authorities.

Overall, the investigation approached answers to the initial questions of the multiple-case study research such as 'why' and 'how' successfully. In brief, data collected by participant observation enabled:

- a tangible understanding of the process of educational production at BBC Schools throughout real events;
- participation in different discussions relevant to the process of production;
- an understanding of the process of interpretation of educational contents into a television programme; and
- an understanding of the educational production model in practice.

4.11 Data Analysis

The multiple-case study employs various sources of data such as interviews, questionnaires, participant observation, documents, records, and audiovisual materials,

as Yin calls them, a 'chain of evidence'. These types of evidence have to be consciously related to each other in order to address the aims of a study at the analysis stage. Strauss and Corbin (1998: 13) indicate that analysis is the interplay between researchers and data, and that such an interplay in multiple-case research is a demanding task. Gillham (2001: 94) argues that there are a number of reasons for this, including

1. the variety of different kinds of evidence obtained in different ways;
2. the skill required in weaving this evidence into a coherent narrative;
3. the need to maintain the focus and direction determined by the overall aims and the specific research questions; and
4. the need to plot the successive revisions of the explanations or 'theories'.

Although multiple-case study analysis is fundamentally based on a researcher's own views, thinking, and style, there are a few principles, which may be applied. For instance, Yin (2003: 111) identifies three general strategies for analysing case studies: relying on theoretical propositions, thinking about rival explanations, and developing a case description. This study employs the strategy of relying on theoretical propositions, following Yin's definitions, with the aims of

1. directing the study toward its theoretical propositions;
2. outlining the data collection plan in order to employ appropriate analytic strategies;
3. collecting relevant data precisely; and
4. answering 'how' and 'why' questions.

The main proposition for this study—that compatible models and criteria of Schools Television production in Britain can be implemented for the IRIB education network toward its improvement—was traced in case studies of different administrative and production areas in both countries. For each institution, the purpose of the case study was to show how schools programmes are outlined, how they translate educational

content into audiovisual materials, and how they achieve standard television production while simultaneously meeting the needs of the curriculum and theories of learning.

Yin (2003: 116-37) introduces five specific analytic techniques—pattern matching, explanation building, time series analysis, logic models, and cross-case syntheses—which can be employed for producing effective and high-quality case studies. Of these, cross-case syntheses, which are comparable with cross-experiment interpretations, are best suited for analysing cases from different institutions.

Hence, this study applied cross-case syntheses as a data analysis technique in order to interpret data from four cases of educational productions in Britain and Iran. Although cross-case syntheses are normally based on non-numeric data analysis, some quantitative measures were used to analyse sample programmes. Overall, the analysis was given that all of the evaluations showed differences in the process of educational productions. The compatible production model itself is the outcome of this technique for data analysis.

4.12 Conclusion

This chapter clarifies the hypothesis and central questions of the study, and describes the research strategies, data collection techniques, and data analysis of investigation. According, to the central questions of the research, which were mainly based on 'why', and 'how', and as the study was involved with different units of analysis, the case studies, and the study of historical context were found to be the most appropriate research strategies for this investigation. Such research strategies assisted this study in examining several first and second hand materials through various data

collection techniques as a sequence of evidences. For instance this investigation collected a range of data from different sources such as literature, interviews, questionnaires, and participant observation. Therefore during the study different aspects of Schools Television in Britain and Iran were reviewed and all four UNITES of analysis namely, BBC Schools, Channel 4 Learning, IRIB Education Network, and ETC were examined closely. Research into the historical context of these Schools Television also helped the investigation to explore the differences between Schools Television in Britain and Iran extensively. More specifically, I used this last approach to historical context to provide chronological information about Schools Television in Britain and in Iran through the following two chapters of this investigation.

Chapter 5

A BRIEF HISTORY OF SCHOOLS BROADCASTING IN THE UNITED KINGDOM

5.1 Introduction

Education has had a distinguished place in the history of radio and television broadcasting in Britain. Radio television systems in Britain, both those publicly funded like the BBC and independent companies like ITV and Channel 4, which are under broadcasting acts, either by obligation or reputation have dedicated comprehensive commitment to educational programming. In fact, education became part of broadcasters' characters, which became integral to the BBC and is an important part of its well-known triple objectives, informing, entertaining, and educating for broadcasting as valuable heritage from the Reith era.

This chapter will examine the history of schools broadcasting in the United Kingdom in order to establish the core issues for discussion about production criteria, and support the detailed analysis in forthcoming chapters. According to the topic of this investigation, it is important to understand the processes of the establishment, key events, and innovative commitments throughout British school broadcasting. To do this, more than eight decades of school broadcasting in Britain will be reviewed. This will include a history of the BBC from the early days of schools radio, highlighting events, which had enormous impact on schools broadcasting and the move toward Schools Television and new generation of delivery like 'Digital Curriculum'. It will also review

the functions of independent television services for schools broadcasting from ITV Schools to Channel 4 Education.

5.2 The creation of the BBC: radio

Neither commercial radio in the United States nor the state model of radio broadcasting in former Soviet Union in the 1920s satisfied John Reith, who became the founder of the BBC. His ambition for broadcasting was to create a company, which would inform, educate and entertain the audience, independent of political obstructions and pressures from commercial sponsors. In 1922, he established a radio broadcasting system in Britain—'the most distinctive and impressive modern British institution' (Briggs, 1995:3)—called the British Broadcasting Company Ltd. It was an independent company in which only manufacturers could hold shares. Five years later, the British government turned the company into a public corporation. As Lord Clarendon, the first Chairman of the Governors of the new corporation argued, the creation of a public corporation was a 'logical and inevitable result' of this venture and the British Broadcasting Corporation (BBC) was launched in 1927 as a permanent broadcasting authority. (1928, quoted in Briggs, 1995:3). The BBC is remarkable in that it was the first regular radio service in the world.

The BBC is a publicly financed broadcasting system, which is run by annual licence fees paid by owners of television sets and radios. It operates under royal charter; the monarch sets up a charter for the BBC and appoints a twelve-person board of

governors who control day-to-day operations and select a general director and other key executives to run the BBC.

However, its administration also is distinctive. On one hand, the BBC has to answer to British parliament against its charter commitments, which makes it similar to a state-broadcasting organisation. On the other hand, it has been privileged by the government to be completely independent in its activities. Moreover, under its charter the BBC is not allowed to broadcast either commercials or sponsored programmes.[1] Hence, this is a great opportunity for British people to have independent voices beyond politicians and commercials.

5.3 BBC educational broadcasting

The history of educational broadcasting in the United Kingdom and 'the BBC's history of making educational programmes for children and adults go back virtually as far as the BBC itself' (Stevenson, 2001b). Although Reith identified information, entertainment, and education as the main objectives for BBC broadcasting in 1922, education always has had a remarkable and distinctive position and became the BBC's primary purpose as set out in its Royal Charter in 1927. As Briggs (1995:173) points out, 'education had a very early place in the BBC's scheme of priorities'. Although the charter charged the BBC with educational responsibilities, the development of the educational section of the BBC was 'self-imposed' (Murray, 1981: 20) and rooted in the cultural background of those who established the institution.

[1] Apart from the BBC venture channels such as BBC World or BBC premier, which broadcast on satellites for a global audience.

More than 80 years of persistent efforts in educational radio broadcasting (1924–2008) and half a century of educational television (1957–2007), as well as the BBC's constant demands for educational services, clearly exposes the belief in the usefulness of education through audiovisual media among policy makers and those who ran the BBC from its earliest stages. In fact, the BBC has a long tradition in education from 1924, when British broadcasting was in a primitive stage in terms of both transmission and production, to the first decade of the twenty-first century, when broadcasting moved into using the high technology of multi-digital and interactive channels with an enormous range of production styles. From the first Director-General of the BBC John Reith to the latter one Mark Thompson, there has been a strong belief that the power of the mass media should be harnessed for educational services.

Reith believed that privileging entertainment as the main aim for 'broadcasting was "a narrow conception" unworthy of the medium' (Cain and Wright, 1994: 14). He also considered broadcasting as a vehicle for general educational objectives and 'great educative work' (Briggs, 1995:173). His view on educational broadcasting was extraordinarily clear: it was 'the best of everything', as he said in a chapter called 'The educational possibilities in broadcasting' in his 1924 book *Broadcast Over Britain* (quoted in Cain and Wright, 1994: 14). This point of view continued throughout the BBC's policies. For instance, Greg Dyke[2] (1999) at the end of the twentieth century renewed the importance of educational services and outlined a vision of learning for the BBC: 'By harnessing the power of the digital media we want to offer everyone, at

[2] Director-General of the BBC (2000-2004).

different stages of their lives, the opportunity to flourish through learning'. Equally, Mark Thompson (2004) endorses such view and mentions:

> Our strategy is to ensure that the BBC's relationship with schools and teachers remains as strong as ever; that we maximise the public value in education from digital technology; and that the BBC will be a major contributor to our learning society for the next decade.

Turning these ambitions and beliefs about the power of media in education into realities has not been easy. Throughout the last eight decades, many obstacles, dispiritedness, and ups and downs have challenged BBC educational services. However, as education has been always at the heart of the BBC and as a variety of people have benefited from its services, the BBC refused to abandon its educational commitments. BBC educational services have been offering education for 18-month–old children and students at colleges and universities; from school broadcasting to adult learning; from phenomenally successful services like the Open University to online services and innumerable informal educational programmes for life-long learning. These strongly attest to the BBC's inexhaustible attempts to overcome obstacles over time and to expand its services broadly.

5.3.1 Education Advisory Committee

When the British Broadcasting Company Ltd. established the educational broadcasting service in 1924, Reith found it important and necessary to collaborate with educational authorities. He thus appointed John Stobart from the government's Board of Education to advise him as an expert in the same year. He also affirmed his belief in broadcasting's potential to teach and train by approving the creation of a Central

Education Advisory Committee to give guidance on schools programmes (Crisell, 1997:17). However, due to a lack of experience in broadcasting, the committee's advice on what to do and how to produce the programmes was inappropriate and did not work properly (Cain and Wright, 1994:16).

On the other hand, despite constant demands on the BBC for educational services, there was great doubt and resistance against the BBC throughout the educational world in its early days. Educationalists criticised educational radio as being unrelated to education. The London County Council (LCC) was the most important local education authority among them (Briggs, 1995:180). Also, teachers strongly disagreed that the BBC was able to play any important role in education; they identified this as their profession and responsibility. They continually raised arguments to show that the services were useless (Briggs, 1995:180) and to argue that the BBC was just trying to cause trouble and create unnecessary expenditure for the educational system (Cane and Wright, 1994:18). The BBC, however, never abandoned its educational services. It later overcame these obstacles during a long-term process and as a result of two important events: the arrival of Mary Somerville and the Kent Experiment.

5.3.2 The arrival of Mary Somerville

Mary Somerville, the daughter of the Scottish School Board chairman, was appointed as school broadcaster in 1925. Somerville's strong interest and belief in the broadcasting service, as well as her extraordinary character, helped her achieve great success in this early and crucial stage of school broadcasting services. As Briggs (1995:

174) points out, 'Somerville believed fervently that broadcasting fired the imagination more quickly than any other educational agency'.

In 1927, Somerville started independently observing those schools, which were using the service. She initiated relationships between broadcasters and audiences and tried to find out what was happening inside the schools. Through her observations, she quickly realised that there was more to discover about the potential of radio in education, and subsequently reformed the lecture-style productions into a combination of imagination and talk in order to construct a new, more effective way of using radio in education. Broadcasters then created new educational programmes that included the use of 'story telling,' which was welcomed warmly by pupils (Briggs, 1995: 182). Although this was against Stobart's belief in the value of the lecture for the educational service, the new generation of producers, with their variety of successful and inspiring programmes such as history programmes by Rhoda Power, proved him wrong (Briggs, 1995: 182). Cain and Wright (1994: 24) describe those creative educational productions as follows:

> ...a new range of radio presentation techniques from the general output was rapidly being adapted for use in school broadcasts, including drama, the 'feature' approach combining actuality and fiction, and the use of 'outside broadcasts', which made it possible to go out into the world and introduce the 'sound picture' into classrooms .

Somerville also discovered that printed materials were very important sources in supporting school broadcasting and meeting teachers' needs more effectively. Thus, in 1927, about 233,000 school pamphlets were distributed (BBC Annual report 1927: 6; Cain and Wright, 1994: 19; Briggs, 1995: 181).

5.3.3 The Kent Experiment

The second event, which was a highly important turning point for BBC school broadcasting, was the completion of a report on usage of the service in schools. In 1928, the Carnegie Trust conducted a comprehensive survey of the BBC school broadcasting service in Kent, called the 'Kent Experiment' or the 'Kent enquiry'.

> Careful study was made of the various Kent schools listening to BBC broadcasts. There were 20 urban and 52 rural or semi-rural schools in all, 12 of the 72 schools having less than 80 pupils and 14 having more than 250 pupils. Both children's and teachers' opinions were collected from observers in the schools, from questionnaires, and from comments made at teachers' conferences' (Briggs, 1995: 177).

The Kent Experiment was a great success for BBC Broadcasting, in particular for its role in changing the views of its opponents. The report proved that educational broadcasting had a number of effects on schools: it provided constant interest, motivated pupils successfully, and inspired teachers to introduce new ideas into their classrooms. The Kent report concluded that school broadcasting had the privilege of providing and presenting facts and knowledge which teachers were not able to do on their own.

The BBC had two other important achievements in addition to the Kent Experiment. First, it learnt how to co-operate with educational authorities and others who were 'less keen or even hostile' towards educational broadcasting. Second, it began to realise the importance of making connections with their audiences and understanding their needs; 'they had been taken to a new region on the other side of the microphone' (Briggs, 1995: 178). Although BBC education was accepted as a part of national education approximately seven years after its inauguration, the most important

improvement in early educational radio broadcasting was made during the Second World War.

5.3.4 Educational radio broadcasting during wartime

During World War II, the BBC, which could communicate with most of the nation, Europe, and the rest of the world, became more aware of the importance of its responsibility to inform, educate, and even entertain (Cain and Wright, 1994: 29). At the beginning of the war, British children and schools moved from big cities into the countryside and education was interrupted for a few weeks. The BBC wanted to ensure that British schools would not be affected by the war and tried to provide educational services for all children who did not have access to their schools anymore.

The BBC found that its educational services had to be reformed very quickly, and early on decided to stop using pamphlets and teachers' notes, as there was no reason to use them during wartime. It estimated that it would have to decrease its school broadcasting programme hours by around 23% (Cain and Wright, 1994: 30), but this did not happen. For school broadcasting, the war instead presented a great challenge to overcome the obstacles as part of the public's desire to conduct 'business as usual' (Cain and Wright, 1994: 30). Due to different challenges and the lack of printed materials, broadcasters were more inspired to create new and imaginative programmes. The quality of programmes flourished constantly; as Mary Somerville pointed out, 'some of the best school broadcasts were made in September 1939' (Cain and Wright, 1994: 30).

The BBC's efforts were successful. People in education such as head teachers and teachers, most of whom were still in doubt about BBC educational services, recognised that the service was working for them. In the very difficult circumstances of war, they gained an appreciation for educational broadcasting, which, as they said, was the only 'real' link between teachers and pupils and the educational world. As Cain and Wright (1994: 32) note:

> The war had been an efficient engine for social reform and this new vision of education, which was to put into practice ideas proposed over decades by Hadow and others, was to provide an exciting challenge to school broadcasting.

Consequently, at the end of the war, BBC school broadcasting was in its strongest position. This was an appropriate base for its further improvement in the coming years. When the war ended, the number of listening licences for school radio was 12,500 and, owing to the success of the service during wartime, the number of users in schools increased to 29,000. The number of pamphlets also rose from 472,500 to about 7,000,000 until Schools Television arrived (Cain and Wright, 1994:40).

5.5 The BBC Television Service

The BBC inaugurated its television broadcasting from Alexandra Palace in November 1936. Radio was the great ambition of Reith and he never really came to terms with arrival of television. When the television service was launched, he wrote in

his diary, 'I had declined to be televised or take part'. He later called television 'an awful snare'.[3] In 1938, Reith resigned from the BBC.

On 1 September 1939, during World War II, the BBC television service was blacked out. It resumed about seven years later on 8 June 1946 to broadcast the Victory Parade. In 1946, during the early days of the BBC television service, fewer than 15,000 licenses were issued. By 1951 this had increased to nearly 600,000. There were about 6 million viewers in 1956, and all homes in Britain had a TV set in the middle of 1960s (Blanchard and Morley, 1982:5).

5.5.1 BBC Schools Television

The ambition of the BBC in providing Schools Television programmes extends back before the Second World War, when the broadcasting of television programmes was in its primitive stage. As Cain and Wright (1994: 21) note, 'the CCSB [Central Council for School Broadcasting] discussed the possibility of Schools Television before the war'. But the BBC began the long process of piloting the service about two decades later in the early fifties. In fact, the BBC had been experimenting with Schools Television since 1952 before it launched the service in 1957. As Weltman (1991: 5) points out:

> the BBC had been trying to make up its mind about Schools Television for nigh on 5 years. The Corporation had conducted a closed circuit experiment with six Middlesex schools in 1952, had been examining its results, discussing them with the SBC [School Broadcasting Consultant] advisers ever since, before finally announcing in November 1955 that a

[3] History of The BBC 1930s, http://www.bbc.co.uk/heritage/story/pdfs/1930s.pdf, (8 January 2006).

> tentative start with two television programmes a week was planned for the 1957 Autumn Term.

However, apart from such aspiration and long-term study, the BBC was defeated by an independent television channel, which launched a Schools Television service just a few months sooner. As Cain and Wright (1994: 40) describe, 'the new, brash and less scrupulous ITV, in the shape of the London company, Associated-Rediffusion beat the BBC to the start by a matter of four months'.

In fact, the BBC faced several problems in launching educational television, namely, 'lacks of receivers, doubts in official circles, and above all, financial constraints both among local education authorities and in the BBC itself' (Cain and Wright, 1994: 43). On the other hand, the end of the BBC's monopoly in television broadcasting and inauguration of the first independent television in Britain (ITV) in 1955, which ushered in a new era of competition, put extra pressure on the BBC. Subsequently, these problems overshadowed the issue of Schools Television. Finally, however, the BBC Schools Television began broadcasting from September 19th 1957, as Burton (1961:121) notes, in 'what was still cautiously described as an "experimental Schools Television service."'

Predictably, due to a lack of previous experience in using television in schools, there were many negative views about such services. For instance, the 'archbishop of Canterbury, Dr. Fisher, who hand been a schoolmaster, thought the idea "nothing less than a perfect disaster", or ministers of education such as David Eccles were doubtful about the new venture, money was restricted, and the BBC had many other priorities'

(Cain, and Wright, 1994: 42). However, and fortunately, Schools Television appeared during the period of success for Schools Radio, and the number of schools using the services was steadily increasing. In addition, 33 years of fruitful background and experience of Schools Radio, specifically during and in after World War II assisted Schools Television to flourish. Therefore, the BBC radio and television schools services grew progressively over the next decades, as Crisell (1997:124) argues,

> By 1961 the BBC had eliminated ITV's early lead, and over the subsequent years showed, as one might expect, a more consistent commitment to educational broadcasting at all levels.

Cain and Wright (1994: 42) also emphasise that 'as the Seventies began, Schools Television reached maturity and had became the country's largest source of supply of visual education'. At the end of the twenty-first century, BBC educational broadcasting was being used by more than 90% of schools (Dyke, 1999).

5.5.2 BBC TWO

In order to provide better schedules and less disruption, which happened from time to time on BBC1, Schools Television moved to BBC TWO in the autumn of 1983. This policy, however, provided more daytime slots for BBC ONE but hardly quaked ITV broadcasting services.

During the last four decades of its history, BBC TWO had traditionally been the home of various educational programmes at different levels. Among them the overnight broadcasting of the '*Learning Zone*', which included educational programmes for the Open University, the most distinguished examples of which include the successful series

such as the '*Bitesize*' revision. Moreover, either during the daytime or at night, BBC TWO also used to host various Schools Television programmes for nearly twenty years. But due to the emergence of a new generation of broadcasting technology in the digital era, some part of Schools Television moved to CBBC, one of the BBC's dedicated digital channels, in 2002.

5.5.3 CBBC

In February 2002, the BBC launched CBBC as one of its two digital channels for children. CBBC aimed to provide various television programmes, including educational ones, for 6 to 12-year-old audiences. As mentioned earlier, BBC TWO moved part of its schools programmes to the CBBC in a show called 'Class TV', which is running as a four-hour block every weekday for 30 weeks annually (during term time) from 9:00 to 13:00. The programmes are mainly designed for pupils to use in the classroom and aimed to assist them and strengthen the existing service on BBC TWO.

To do this, the philosophy of CBBC was established as 'learning through fun'. Notably, however, Class TV aimed to meet the objectives of the school curriculum and were designed for use in the classroom, implementing all production materials to make learning 'invisible'. 'This means introducing an element of learning and life skills development across a large part of its output, including drama and factual', where all productions of CBBC channel are based on such policy (Annual Report and Accounts 2004/2005: 28).

5.5.4 Digital Curriculum (BBC Jam)

The digital curriculum, so called 'BBC Jam'[4], was a new public service from the BBC. The service following pilots in schools during 2005 were launched in January 2006. BBC Jam was a mix of digital learning resources – including video, flash animations, interactive games, printable worksheets, text pages and illustrations – providing a variety of ways to learn. BBC Jam was initially designed for a 5 to 16-year-old target audience; however, the service was accessible online to all teachers and parents at home, in the classroom and at venues thought the community in the UK. As Liz Cleaver, controller of Learning and Interactive, BBC, notes,

> ...BBC Jam will provide a service that stimulates children and engages them in education by putting creativity and control into their hands. This heralds an exciting development for online learning to make a true impact on education in the UK.

To do this, BBC Jam was designed to employ the power of interactivity to provide a range of compelling and exciting multi-media content. It was planned to help pupils to learn on their own demand and pace in a way that interests and suits them most.

BBC Jam, since the early days of planning and piloting, generated great pressure on the BBC Schools Television service. For instance, it allocated a very big budget (like £135m) to BBC Jam, while the annual budget of BBC Schools Television in 2005 was about £6m. It might be argued that this is a new era for delivering educational materials to pupils, and that technological innovations are inevitable. However, each media has unique capabilities, which cannot be replaced. For example, photography has not been

[4] BBC Press Office, http://www.bbc.co.uk/pressoffice/pressreleases/stories/2005/09_september/29/jam.shtml, (29 September 2005).

replaced with painting up to now, and the explosion of information through the World Wide Web could not push aside traditional newspapers. Although Schools Television is in a difficult stage due to the new generation of technology, there are still some unique characteristics of television, which can survive the change. There is evidence, for example, that short video clips, which initially came from Schools Television programmes, are still popular among pupils. In a pilot study evaluating the BBC Digital Curriculum on students' attitudes to literacy resources, Coe et al. (2002: 6) found that more than 60% of pupils agreed that the video clips helped them learn. While the video clips on BBC Jam are considerably shorter, more specified, and more easily accessible than those used in traditional Schools Television programmes, there are several valuable areas, which such delivery cannot approach. Emma Wakefield, director of Lambent Productions, notes

> there is nothing better than whole-class programmes to get children stimulated. There is nothing like television for getting across a strong narrative. We are also experimenting using video diaries for sex education; these are used time and again by teachers. They write and tell us: this is the best stuff because it is drawn from life. [...] These are put out in real time. They have an impact (quoted in Brown, 2002: 2).

Defending 'traditional analogue' television and its values was re-emphasised by Moss (2002, quoted in Brown, 2002: 2), who stated that "he is not at all opposed to e-learning. It is just important to remember it is still a largely unproven tool and should not supplant an older, valued classroom-based service". However, Stevenson (2002) responded to Brown's article and defended the policy of the BBC on the Digital Curriculum project, nothing that the BBC continued to value narrative video. He said,

> ...as schools move to more e-learning, we would foresee a gradual reduction in TV and radio broadcasts. But we will match the pace of take-up and will not run ahead of schools' technology and needs. Equally important is the fact that narrative video must remain at the heart of the BBC's offering. [...] We will still make films, but in the future they are likely to be used as part of a multi-media interactive service - and a service that can be used for whole-class teaching via an electronic whiteboard.

It must be an issue of concern that the invaluable heritage of BBC's long and fruitful background of school broadcasting will not be destroyed. It has to be noted that both positive and negative views on new technological innovations and the movement into a new era of digitalism has to be concerned with the sake of education and not with the media itself. Digital Curriculum or BBC Jam, like schools radio or television, has their strengths and weaknesses, and ultimately it is the teacher who must employ the one s/he thinks it is useful most for the pupils. The BBC and others, however, are trying to make those technologies reliably and broadly available. Surprisingly, due to allegations from some in the industry that BBC Jam was damaging their interests, the service was suspended in March 2007 only after fifteen months in service.

5.6 Independent television broadcasting in Britain

In 1949, the Labour government set up a Committee of Inquiry, chaired by Lord Beveridge, to consider the future of broadcasting. This committee issued its report in January 1951. Its central recommendation was that the BBC should retain its monopoly position in providing broadcasting services (Quoted by Blanchard and Morley, 1982:5). This was the view of all the members of the committee except one—Selwyn Lloyd—who wrote a dissenting Minority Report arguing that the BBC's monopoly should be

broken up and space for (controlled) commercial broadcasting made available (Blanchard and Morley, 1982:5).

In 1954, when the Television Act established a commercial and independent television channel called Independent Television (ITV), the BBC's monopoly on television service ended. ITV broadcasted its first programme in September 1955. The act also created the Independent Television Authority (ITA)[5] to monitor the activities of independent television services in Britain.

5.6.1 ITV Schools (1957-1993)

ITV Schools programmes launched on 13th May 1957. The service began as an experiment by London based broadcaster, Associated Rediffusion, which installed 200 free television sets to schools throughout London.

This was the first Schools Television service in Britain; however, as mentioned earlier in this chapter, while the BBC piloted and experimented with Schools Television for a long time, ITV announced its plan for such service just one year before the launch. Burton (1961: 121) notes,

> ... in December 1956 Associated-Rediffusion, whose managing director, Paul Adorian, has demonstrated a keen interest in telecasts for schools, announced that it would broadcast a trail series in May 1957, which might lead to regular programmes.

The inauguration of these television services by Rediffusion caused many controversial arguments among educational authorities regarding its inappropriate level

[5] ITA became the Independent Broadcasting Authority (IBA) in 1972. Under the 1990 Broadcasting Act, IBA was replaced by the Independent Television Commission (ITC). In December 2003, ITC moved to the Office of Communications (Ofcom) as new communications sector regulator.

of consultancy with educational bodies. For instance, Fawdry (1974: 160) notes that "[t]he National Union of Teachers asked what consultation there had been, and would be, with teachers: there had not been any". However, Rediffusion claimed that they had sufficiently collaborated with educational people:

> The Company are very conscious of their responsibilities in this field. They have had consultations with the Children's Advisory Committee of the Independent Television Authority; and they have themselves set up and Educational Advisory Council and a School Broadcasts Committee, on both of which the Association of the local authorities and of the teachers are officially represented. (Associate Rediffusion, 1957:3)

Subsequently, in the same year that the first Schools Television was broadcast in Britain, the ITA in its annual report (1956-57), notified Rediffusion-Association of the need for more adequate consultations with educational advisors. They wrote,

> whilst welcoming the initiative and enterprise of the company in undertaking such an important venture, the (Children's Advisory) committee was obliged to place emphasis on the need for careful consultation with representatives of the principal organisations, which speak for these interests (quoted in Burton, 1961: 121)

In fact, there were also matters of competition, in which ITV wanted to prove its capabilities in the public services, and some bizarre attitudes were even expressed within both broadcasters. For instance, in a weekly paper[6] one of the Rediffusion staff impudently insulted the BBC's long efforts in Schools Television, saying, "the BBC has been planning this for four years. Well, we are going to shock auntie by showing her how fast things can be done if you try" (quoted in Burton, 1961: 121).

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[6] *The Manchester Guardian Weekly*, January 3, 1957.

However, everything soon normalised between Britain's two Schools Television providers, and they soon became more partners than opponents. As Weltman (1991: 5) remarks,

> If competition there was to be at all, it could only be in the form of friendly rivalry in the quality of service offered to a common cause. By 1976 it was possible for the author of a popular account of British television to write: "School broadcasting is the area of closest cooperation between the BBC and ITV".

One distinguished event, which improved the ITV Schools services, was the arrival of Yorkshire Television in 1968. Crisell (1997: 124) points out that 'by the late 1970s ITV schools programmes were at some point reaching 22,000 primary and 3,800 secondary institutions about 76 per cent of the total'.

In 1990, the Government passed the Broadcasting Act and ITV was allowed to hand over a variety of unbeneficial programmes to which it had been committed as part of its public service. ITV has been broadcasting school programmes since 1957 and broadcasters are legally prohibited from selling advertising around school programmes; thus, ITV was not able to make money from this public service. As John Richmond[7] (2000) points out, 'even if advertising had been allowed, it's doubtful that it would have offset the cost of production'.

Thus, after 36 years (1957–93), ITV decided to leave public service. The government, which was keen to keep this service running, offered it to Channel 4 under two remarkable conditions. First, Channel 4 would not have to compete for its second ten-year franchise. It would be given the right, unchallenged, to broadcast for ten more

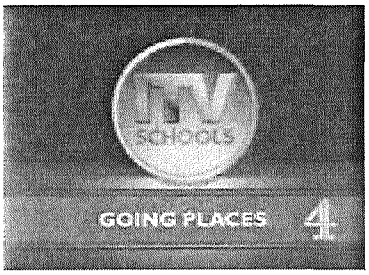
[7] Commissioning Editor of 4 Learning (1993-2003).

years. Second, a proportion of the cost of the schools service could be recouped by showing a few more advertisements in the evenings than would normally be allowed (Broadcasting Act, 1990).

In return, the government expected Channel 4 to do a number of things. It obliged the channel to 330 hours of school programming, which were to be broadcast annually during the school terms. And, according to Channel 4's licence, the programmes must be 'of high quality'.[8]

The offer was accepted and ITV Schools was scheduled to move to Channel 4 on 14 September 1987.[9] However, the programmes were still produced and planned by the same people in the ITV companies (Weltman, 1991:5). In fact, until June 1993, Channel 4 was broadcasting ITV Schools, at which time it started school services under its own title (figure 5-1).

Figure 5-1, ITV Schools on Channel 4 (1987-1993)



Source: http://www.tv-ark.org.uk/schools/itvschoolson4_history.html (5 May 2005).

[8] This requires the ITC to ensure that there is a suitable proportion of schools programmes on Channels 3, 4 and 5 (taken as a whole). Any of these licences may include conditions requiring the licence holder to produce or finance the production of schools programmes; they must be of high quality and meet the needs of the schools in the relevant areas (Broadcasting Act 1990, Section 34).

[9] http://www.ITVschools.co.uk, (10 March 2002).

Channel 4 became the new home of ITV Schools, and BBC TWO did the same for BBC ONE. This was a good opportunity for ITV to access the daytime schedules in order to compete with BBC ONE.

5.6.2 Channel 4

Channel 4, which began broadcasting in 1982, is the second independent television channel in the United Kingdom. It was 'organised as a wholly owned subsidiary of the Independent Broadcasting Authority, funded by subscriptions from the ITV companies' (Blanchard and Morley, 1982:3).

There were two explanations for the launch of Channel 4 as a public service television in the United Kingdom: the tradition of television in the UK, and the television business (Richmond, 2000).

In 1982, the British government agreed for a new television channel as a platform for fresh voices. They wanted to provide a range of subjects and new approach to television in the UK. The government also emphasised innovation, new style, risk-taking and tentative programme making (Richmond, 2000).

It is both unusual and advantageous and inspiring when a television channel is encouraged to take risks by law. Channel 4 was 'required by law to be, in a number of ways, "distinctive"' (Blanchard and Morley, 1982:3). Although taking risks might mean failure in output, for a new channel with a new style of production, it was a great challenge to be different from the others.

In the early 1980s there were many people in the UK with backgrounds in programme making and an interest in television production who did not have the opportunity to work with broadcasting organisations like the BBC or ITV. The government thus took a decision to launch a new television channel—Channel 4—for industrial reasons.

Channel 4 does not make its own programmes, but mainly commission other independent television companies to produce them. In the early 1980s it was the only channel in the UK to make programmes in this way. It was a commercial platform, which helped the broadcasting industry to grow and, as a result, nearly a thousand independent companies have been established since 1982. As Crisell (1997:198) points out, 'the independent sector has certainly flourished since the launch of Channel 4'.

Television production companies expanded in the UK for three distinctive reasons. First, in 1987, the IBA announced that 25% of ITV programmes must be produced by independents, and the BBC agreed to do the same. As a result, in 1990, the BBC and ITV delegated some of their productions to independent companies. Second, Channel5, a commercial television channel in the UK, which was established in 1996, commissions all its programmes to independent companies. Finally, cable and satellite organisations commission part of their programmes to other production companies.

The structure of Channel 4 is a combination of both public service and commercial production, which is the main reason for its success (Richmond, 2000). It does not have any shareholders (Ward, 2000); therefore, there is no pressure on the channel to satisfy supporters. Consequently, the policies of programme making at Channel 4 are based on

the freedom to broadcast different subjects, even for small audiences. In 2000, Channel 4 had about 11% of all television viewers in the UK—enough to run a viable television channel. In addition, although some funding came from programme sales, Channel 4's main source of funds was and remains commercial advertising (Richmond, 2000).

5.6.3 Channel 4 Schools (1993-2000)

In September 1993, Channel 4 launched its own Schools service. Now Channel 4 was in total control of the service from planning and designing the programmes to production and broadcasting.

Channel 4 Schools provided educational sources such as television programmes, books, CD-ROMs, and Internet to 5 to 16-year-olds (i.e., children in the 11 years of compulsory schooling). When it took over the school service from ITV in 1993, programme making was the first thing to be renewed. A variety of topics were created to increase the options available to teachers and pupils. In production methods, although Channel 4 Schools emphasised narrative and entertainment, the programmes were coordinated and relied on the national curriculum in order to provide reliable educational materials to schools. Also, the development of new technologies through multimedia such as CD-ROMs and the Internet in the late 1990s allowed Channel 4 to create a variety of innovative multimedia materials in addition to educational television programmes.

5.6.4 Channel 4 Learning (2000-2005)

Channel 4 School Learning was renamed 4 Learning in September 2000. New educational policies and the provision of Channel 4 itself, which was concerned with achieving more educational objectives in addition to those set for schoolchildren, prompted the renaming. 4 Learning decided to create new educational programmes for other, non-school groups of audiences: 3 to 5-year-olds, 16 to 19s, and adults. Under such policy, 4 Learning in effect became the learning department of Channel 4, consolidating all educational sectors such as schools, children, young people and adults in one place.

5.6.4.1 Channel 4 Learning structure

As mentioned earlier, Channel 4 does not make its own programmes; rather, independent companies in different fields supply 4 Learning. There are a variety of suppliers, ranging from writers, illustrators and designers to production managers and media and television companies. The co-operation of these suppliers and 4 Learning help the project in terms of both funding and development.

In 2002, Channel 4 gave 4 Learning around £15 million to develop a collection of resources (e.g., television, the Internet, CD-ROMs, and books) to support the curriculum in the United Kingdom. As the commercial endower and a part of 4Ventures, 4 Learning started seeking international opportunities to sell and distribute its products. Within its new organisation, 4 Learning had two roles: first to service the educational needs of schools and colleges in the UK as a public service, and second to seek out commercial

opportunities to make and distribute educational media throughout the world (Richmond, 2002).

5.6.5 Channel 4 Education (since 2005)

In 2005, new policies at Channel 4 have divided 4 Learning into two sections: a) 4 Learning merely exists for marketing Channel 4 productions and selling its products both within the UK and internationally, and b) the broadcast component was renamed Channel 4 Education (Mavadia, 2006). Under the new policy, Schools Television on Channel 4 changed dramatically. For instance, they disbanded commissioning primary schools programmes and concentrated on secondary schools, more specifically for 14 to 19-year-old audiences. This meant that after 47 years, independent television broadcasters (from ITV Schools to Channel 4 Schools, and 4 Learning)[10] stopped providing educational programmes for primary schools. Hence, the service remained the purview of the BBC itself.

However, this does not mean that Channel 4 decreased its commitment to producing educational programmes. Kevin Lygo, Director of Television Channel 4, emphasises that Channel 4 still have to meet Ofcom's requirements for educational services, which is to "stimulate our interest in and knowledge of arts, science, history and other topics through content that is accessible and can encourage informal learning" (2005: 3). In fact, part of Channel 4's licence is still to address schoolchildren and provide schools programmes under Ofcom's conditions.

[10] 36 years on ITV Schools, and 11 years on Channel 4 (Schools/Learning).

> Subject to Condition 10(1) the Corporation shall transmit at least 330 hours of schools programmes in each calendar year of the Licensing Period, excluding presentation material. These schools programmes will fulfil the needs of the curriculum and will be supported by a full range of appropriate material (Ofcom, 2004:36).

In fact, as the main target audience age for schools programmes on Channel 4 Education has changed from 3–19 to 14–19, Channel 4's commitments can be entirely dedicated to secondary students. This means that it has to make a minimum of 330 hours of schools programmes exclusively for the secondary level. This provides a great opportunity for Channel 4 to commission various genre of programmes about different novel issues, as Lygo describes:

> In Schools programmes, Channel 4 will focus on the needs of young people who are in transition between the world of learning and the world of work, as well as on those in a less formal educational setting, concentrating on the curriculum for fourteen to nineteen year olds and the skills they need to deal with the many life choices they face (2005:7).

Making educational television programmes for this target audience is both a crucial and difficult task, and it is inevitable that Channel 4 will take more risks on several issues. Rabbatts[11] (2005:1) re-emphasises such policies and notes,

> We are trying to capture a challenging age range – the transition from adolescence to adulthood – and are looking for programmes that speak to those emotional and social transitions, and open up the world in ways that make sense to young people.

Accordingly, Channel 4 Education conducted a major survey to understand the views of their target audiences on different issues. Lucy Willis,[12] emphasises that:

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[11] Heather Rabbatts, Head of Education at Channel 4 (2002-2006)
[12] Temporary successor of Deborah Ward (Channel 4 Education Commissioning Editor) in 2005.

> key to our department is transition, as 14-19-year-olds are discovering who they are. We know our audience well, and that we have to make entertaining and inspiring programmes that hook them (2005: 4).

She also describes four areas in which the department would like to commission programmes for 2006:

- 'Teenage Angst' covers health and emotional issues, and might include subjects such as stress, self-harm, drugs and bullying.
- 'Rights of Passage' addresses personal expectations. This year, we are particularly interested in female expectations, and the mismatch between girls' expectations and reality. This area addresses things happening to teenagers for the first time.
- We are keen on 'Opening up the Wider World' to teenagers, with the internet, and also by introducing science and history in compelling ways.
- 'What to Do Next?' We can open up this area to a wider audience.

To obtain such objectives, Channel 4 Education employs entertainment and drama. While they are not easy to approach in terms of production ideas, they are capable of delivering difficult subject matter and reaching the audience better. Rabbatts (2005:7) illustrates the ambition of Channel 4 Education and points out, 'we should be a favoured place for the untried'.

5.7 Conclusion

Education has been a central issue throughout the more than eighty years of the history of broadcasting in Britain. In fact, both types of broadcasting institutions in

Britain (publicly funded like the BBC, or independent television channels like ITV and Channel 4) have had long-term commitments to schools broadcasting. For instance, the BBC's schools broadcasting was launched only two years after the BBC was established, and ITV (the first independent television channel in Britain) also launched its Schools Television in 1957, two years after its establishment in 1955.

This chapter explained the inseparable relationship between broadcasting and education in Britain. One reason for this was the importance of maintaining a constant relationship with educational authorities like the Education Advisory Committee, which BBC schools broadcasting established from the early days of its inauguration. This body fulfilled two valuable functions. Firstly, it was an opportunity for the BBC to justify then-unknown services to educational bodies in order to decrease critics' pressures and even achieve their support. Secondly, the BBC could have access to valuable sources of advice for its productions' reliability. In addition to this important relationship, the employment of exceptional people like Mary Somerville as pioneers of creative material in schools radio programmes enriched the new media for education. Somerville and others soon found that schools radio was not merely for lecturing, but also that several innovative areas and capabilities in such media could be employed for developing creative learning materials. They examined new areas of schools broadcasting, which could highly stimulate pupils. This effort was recognised by comprehensive surveys like the Kent Experiment, which supported BBC schools broadcasting in the early days, and cemented its position.

This chapter also clarified how and why the period of the Second World War was very important for schools broadcasting, and events in this period revealed its capabilities more practically. This put schools broadcasting in a strong position and consolidated its future.

Schools broadcasting entered the era of television in the midst of a competition between the BBC and the newly inaugurated independent television channel 'ITV', which ended the BBC's monopoly in broadcasting. Rediffusion-Association, a London based television company, established the first Schools Television for ITV a few months earlier than the BBC, which the latter had been planning, piloting, and consulting about for a long time. Although Schools Television in Britain experienced stiff competition at the beginning, this soon faded and the channels became more collaborative. The main concerns focused on improving production, which could best serve education.

The new generation of technology provided a wide range of platforms for learning materials, included audio and visual materials. CD ROMs, TV ROMs, Internet, and online and interactive services including computers, digital televisions and other rapid technical innovations, have already changed the function of schools radio and television. However, radio and television schools services are not weakening as there are several areas in which they can provide specific services that are irreplaceable with other media. For instance, narrative is a very powerful tool of radio and television, which will survive the introduction of other services.

This comprehensive background of schools broadcasting in Britain will be referred to in forthcoming chapters. In order to get a full picture, however, it is necessary to

examine equally the history of schools broadcasting in Iran. This will enable the study to discover the differences between the two and support discussions in forthcoming chapters.

Chapter 6

A BRIEF HISTORY OF EDUCATIONAL AND SCHOOLS BROADCASTING IN IRAN

6.1 Introduction

This chapter will explore the two eras in the history of radio and television in pre- and post-Islamic revolutionary Iran, and their relation to formal and informal educational and schools broadcasting approaches will be reviewed in detail.

Throughout 66 years of history, radio and television in Iran have been influenced by various policies and political ideologies. In pre-revolutionary Iran under the Shah, radio and television were mainly employed to connect Iran to international communities as part of the regime's initial policy to modernise Iran by encouraging strong influence from western countries. On the contrary, after the Islamic revolution in 1979, a new government started to establish a unique form of radio and television based on moral and Islamic values. Following Mowlana (1997: 205), it is argued that they re-identified the function of broadcasting materials as a means of Islamic cultural transmission. However, like other countries, policy makers in Iran within both regimes employed all functions of radio and television to disseminate information, political persuasion, cultural infusion, commercials, and education.

Educational broadcasting in both eras had a particular place. In pre-revolutionary Iran, different approaches were practiced in independent and quasi-government-owned media, and even by the Ministry of Education. The

distinguishing event was the inauguration of the first official educational broadcasting and its nationwide development. However, this educational service was suspended after the Islamic revolution in 1979.

In post-revolutionary Iran, ideologically, education was positioned in the centre of broadcasting policy, although formal educational broadcasting was replaced with general educational programmes for more than two decades. In this approach, education was embedded in mainstream broadcasting materials. They started to evaluate the programmes for their educational, so-called 'message' [*peyam*] contents, and looked what the audience could learn from such material. However, it has to be mentioned that this policy of productions did not support formal educational and schools broadcasting, but rather emphasised religion and moral issues. Eventually, throughout several attempts in different periods, formal educational broadcasting in post-revolutionary Iran was re-established with a dedicated television channel and broad educational objectives, which also covered schools programmes.

6.2 Television in Iran: dawn

The initial idea for a television channel in Iran came from Firuz[1] Sabet Pasal, son of well-known Iranian businessman Habibollah Sabet Pasal.[2] As Tehranian (1976: 258) mentions, "in contrast to radio, which started because of government initiative, television was introduced into Iran in 1958 by a private entrepreneur". In fact, the 'possibility of adopting modern television broadcasting to Persia's particular needs' was the subject of a thesis at Harvard Business School, written by Firuz Sabet

[1] Also called *Iraj* by Kimiachi (1978:111).
[2] He was the chairman of Firuz Trading Company, the founder of the Pepsi Cola plants, and held franchises for General Electric, Volkswagen, and many other major industries in Iran.

Pasal. This impressed Mohammad Reza Shah (the last monarch in Iran), who let him and his father pioneer the establishment of a television service in Iran. Accordingly, as Sreberny-Mohammadi and Mohammadi (1994:62) note, 'a parliamentary bill in June 1958 gave the private company permission to establish a television broadcast centre in Tehran.' Hence, the government granted the proprietor of five-year monopoly to operate television transmitters and to import television receivers (Tehranian, 1976: 258). Subsequently, the Pasal family inaugurated a commercial television service called 'Television of Iran' (TV.I) on October 7, 1958 (Mesbahee, 1973 quoted in Mohsenpour, 1979:12). It was the first independent television channel in the Middle East and, as Sajad (1973:111) points out, "the major aims of this television service, sponsored by the government of Iran with help from the United States, were informational, educational, and entertaining".

In February 1959, TV.I inaugurated its second station, which also was a commercial channel in Abadan a city in the south-western part of the country (Mohsenpour, 1979: 12). Eventually, the Iranian government decided to take over the system, hence in 1969 they purchased both stations and transferred their facilities to the newly established National Iranian Television (Mesbahee, 1973:27).

6.3 Educational and schools broadcasting in Iran: Schools Radio

Although radio in Iran was established in 1940, the use of radio for schools broadcasting was not very remarkable. In pre-revolutionary Iran, there were some schools programmes in the early years of radio in Iran (Sreberny-Mohammadi and Mohammadi, 1994:53). However, the educational service of radio in that period was limited to general issues and was not for formal schools programmes (Taheri, 1999:

30). The first official educational programmes for radio in post-revolutionary Iran were launched in 1993, and included broadcasting management training, adult learning and some programmes for high schools (Taheri, 1999: 34). However, due to changing policies of educational radio broadcasting in cultural programmes, such activities decreased significantly after 1998.

6.4 Educational and schools broadcasting in Iran: Schools Television

Educational and Schools Television in Iran has a forty-year fragmented history in two major institutions: the Ministry of Education, and Television. Together, these institutions have been the most historically active in using audiovisual materials for learning purposes in pre- and post-revolutionary Iran. The commitments in different eras will be studied in this chapter; however, it has to be mentioned that due to the low level of activity of schools radio in Iran, the history of schools broadcasting in Iran has inevitably concentrated on television.

6.5 Educational and Schools Television in pre-revolutionary Iran (1964–79)

In pre-revolutionary Iran there were three main institutions involved with Schools Television: Television of Iran, Tehran's Educational Television, and National Iranian Radio Television.

6.5.1 Television of Iran: educational services (1964-66)

Television of Iran initiated the first educational television in Iran in 1964. It started broadcasting a series of high school courses taught by well-known teachers. The broadcast lasted for two years, running an hour each day except on public holidays. Although the style of programmes was simply a teacher and blackboard in

front of a television camera, they were a new and unique experience for teachers and pupils and were therefore very successful in attracting viewers (Kimiachi, 1978: 168). According to Sajad (1971:111)"The major portion of broadcasting time [on TV.I] was devoted to educational programs in the earlier period were those of foreign language teaching. As a result of this demonstrated capability of television in education, in 1966 the Ministry of Education inaugurated its own educational television station in southeast Tehran (Kimiachi, 1978: 168).

6.5.2 Tehran's Educational Television Organisation [Tehran's ETV] (1966–72)

In 1959, the Culture Ministry of Iran established the 'Bureau of Audio Visual and Art Movements' (*Edareh_e Faaliatha_ye Honari va Samei va Basari*) and on 26 January 1966, the Tehran's Educational Television Organisation (*Sazeman_e Television_e Amoozeshi_e Tehran*), or 'Tehran ETV' was inaugurated. It was the first official educational television in Iran, funded mainly by the National Iranian Oil Company (NIOC), and was comprised of a small television station with basic production equipment and a 1,000-watt transmitter on Channel 11. The station was located in a 45-meter-high building in Baharestan Square in southeast Tehran. As Babazadeh[3] (2002) mentions, due to the low power of the transmission, the programmes were receivable only in Tehran and surrounding local areas.[4] The main objectives of this channel were to correct for the lack of teachers and use proficient teachers for all students in Iran. Mehrpour, the Director General of Tehran's ETV in 1970, defined the aims of this television station:

[3] Azim Babazadeh, Technical Manager of Tehran's Educational Television (1966-1972) in questionnaire 2002.
[4] Karaj, Tjarish, Varamin, Raay, and Kahrizak (near Qum) were able to view the programmes.

> Television can be used both for direct teaching and as an aid to the teachers to supplement their lectures. We plan to utilize both of these uses to combat our educational problems at present. We have a high illiteracy rate and crowded schools because of inadequate facilities. This can help teachers or aid educators to improve the quality of education (quoted by Sajad, 1971: 270).

From 1966 to 1970, Tehran's ETV mainly broadcast educational programmes for high school students, three hours a day. Later, in 1970, it increased its broadcasting to over seven hours per day, six days a week, Saturdays to Thursdays from 14:00 to 21:00. There were also some entertainment programmes aired on Fridays from 09:00 to 12:00.[5]

Secondary school students (which constituted more than 75 per cent of Tehran's ETV viewers) were the main beneficiaries of these programmes as they could use them to revise some course topics such as maths, trigonometry, algebra, geometry, and foreign language skills like English or Arabic. In addition to the regular educational programmes, Tehran's ETV also broadcast a number of other programmes, including Preparation for the entrance examinations for universities in Iran, adult literacy learning (*Akkaber*), scientific films, quiz shows, movies, music, and special programmes for children on public holidays.

Although educational programmes in Iran were very motivating, in the late 1960s television sets were unavailable to a large number of students. Therefore, in 1970, experts from the Ministry of Education and Tehran's ETV established over sixteen television clubs in particular high schools in Tehran. Each television club had

[5] The Iranian week runs from Saturday to Friday; Fridays are weekend holidays (Moslem public holidays).

a seating capacity of 100 and an instructor to supervise operations (Radio and TV, 1970: 6).

Tehran's ETV was supported by four laboratories: chemistry, physics, geology and natural science, which were funded by the NIOC. Each was supervised by a university lecturer or textbook author. TV.I and the Iranian Telecommunication Centre provided a staff of 36 people who worked in two teams in two shifts from 08:00 to 23:00. The style of production remained the same: teacher lectures with a blackboard, which it was possible to broadcast, live from a traditional classroom. In the pre-production stage, different expert groups worked in teams. The head of each group edited the contents of the educational script, while one of the teachers in the group presented the programme live or recorded it onto tape on a video recorder (Babazadeh, 2002).[6]

Due to a shortage of recoding facilities and expensive production equipment such as video recorders, light facilities and so on, approximately 90 per cent of programmes were broadcast live (Babazadeh, 2000).[7] Low transmission power and the absence of a reliable budget were two important obstacles to the improvement of Tehran's ETV as Mesbahee (1973:55) also emphasises 'Tehran's ETV station, due to its limited budget and facilities, [could not] meet a nation-wide demand for educational and instructional broadcasting'. Tehran's ETV was unable to provide

[6] Ibid 3.
[7] Azim Babazadeh, Technical Manager of Tehran's Educational Television (1966-1972), interviewed by the author in 25 February 2000, Tehran-Iran.

service in both productions and delivery; as Sajad (1971: 114) notes, the facilities were extremely limited in comparison to NITV [National Iranian Television], and the service was confined to only one city, the capital of Iran, Tehran.

In another view, Mosavi Gheravi (2002: 21) emphasises that 'this channel became a failure due to a lack of clear objectives and efficient planning'. Hence, as he notes 'since 1971, a series of meetings has taken place between the Ministry of Education and National Iranian Television on a possible merger of ETV and NITV' (Mesbahee, 1973:55).

Subsequently, National Iranian Radio Television (NIRT), the successor of National Iranian Television (NITV), took over educational broadcasting services from Tehran's Educational Television in 1972. NIRT established its educational services under the name of Educational Radio and Television of Iran (ERTI) and inaugurated the service in 1973.

6.5.3 Educational Radio and Television of Iran (ERTI) (1973-79)

In September 1973, after a series of initial studies and with the help of the Ministry of Education, NIRT launched an official national educational service for the first time in Iranian broadcasting history. ERTI, which was part of NIRT on Channel 2 (*Barnameh_e Dovom*), was located in the building of former Television of Iran centre in the north of Tehran. The name of the Educational Radio and Television of Iran demonstrated that NIRT was planning for schools radio; however, as mentioned earlier in this chapter, there were no significant attempts to create such an educational service in Iran.

Simultaneously, in the early 1970s, the Ministry of Education decided to reform the educational system. The older model of six grades for primary, three grades for secondary (Cycle One) and three grades for high school (Cycle two) was transformed into a new model: five grades for primary, three grades for Guidance Cycle (*Doreh_e Rahnamaii*) and four grades for high schools.

As part of this new educational system, in 1972 experts from the Ministry of Education and NIRT conducted comprehensive research to find out which kinds of schools would be more important to support with educational television in the first phase. They thought that television might be an inappropriate tool for primary schools, which were involved with basic curricular objectives such as reading and writing. They also found high schools, with their tight timetables and lack of equipment, not a good place to introduce educational television services. Due to the lack of experienced teachers in the new '*guidance schools*', the Iranian government decided to run the first national educational television programmes in those schools. They thought that educational television could help pupils and teachers nationwide become familiar with the new educational system and particularly with '*guidance schools*'. Saba (1994: 76) also emphasises,

> it was decided that television programs should be produced and broadcast for the guidance period [...] since the curriculum for this period had gone through systematic revision, and was generally considered by the Ministry of Education and NIRT/ERTI personnel as best suited for educational television.

Hence, the first series of educational programmes on ERTI were dedicated to Grade One of guidance, and gradually advanced to other grades and high schools afterward.

6.5.3.1 ERTI: Feasibility

The Ministry of Education planned to install a TV set in each guidance school throughout the country and anticipated an increase to two or three sets in the future. However, NIRT organisation had to overcome problems such as poor provision of TV sets to schools, technical problems, and the need to train teachers, educational technologists[8], and programme makers.

In 1973, ERTI was working on seven guidance topics in the first grade: maths, English, science, history, vocational [skills], geography and social sciences. These topics were related to the curriculum in order to help teachers in the classroom. Educational programmes were broadcast from 08:00 until 12:00 and 14:45 to 16:00 on Channels 7 and 11 (except on Thursday afternoons and Fridays). Each programme was 15 to 20 minutes long and guidance pupils throughout the country were able to watch them. There were 40 to 45-minute slots between programmes to provide time for teachers to explain the topic or for pupils to take breaks. The broadcasting was scheduled to be viewed at the beginning or end of classroom sessions in order to prevent teaching interruptions. Each programme was broadcast four times per week to enable teachers to harmonise their timetables with educational television. In this way, they were also able to use a programme more than once if they wished to. However, it has to be mentioned that by 1973, most guidance schools had not yet been provided with TV sets and it was impossible to evaluate educational television to get the perspectives of teachers and pupils at this stage (Sazegar, 1978: 134).

[8] For educational/school programme in Iran they act like educational officers/advisors in Britain.

6.5.3.2 ERTI: Satellite

The recognition of the value of educational radio and television prompted comprehensive studies at NIRT about how satellite might be used for educational purposes. By using satellite, ERTI could be able to reach and educate deprived people in remote areas of Iran. To do this, NIRT established a contract with Stanford University's Communication Satellite Planning Centre in order to plan and develop a satellite system for educational purposes. Joseph (1978 quoted in Mohsenpour, 1979: 6) notes that the project had two main purposes: first to determine the most feasible technical design for the satellite and ground stations, and second, to evaluate how educational television and telecommunication services could help meet Iran's educational objectives. Therefore, from 1975-76 Stanford University prepared a few comprehensive reports for NIRT. This significantly increased ERTI's responsibilities. As ERTI planned to use satellite technology to broadcast to the whole country, it was expected to expand its commitments from school programmes to other areas such as vocation, agriculture, literacy, teacher training, higher education, and medical education. However, such ambitions and plans were suspended in 1979 due to the Islamic revolution.

6.6 Educational and Schools Television in post-revolutionary Iran (1979-2007)

After the Islamic revolution in 1979, Radio and Television came under extreme pressure. It was distrusted as a metaphor or instrument of westernisation, and the new Islamic government wanted to reform it dramatically. NIRT was re-established and renamed the Islamic Republic of Iran Broadcasting (IRIB). Obviously, in the

early years of the revolution all radio and television departments, including educational television, faced disordered experiences. Moballeghi Eslami, the educational supervisor of IRIB (Channel 2), described the condition of educational television in early post-revolutionary Iran:

> When I was appointed as educational television supervisor in early 1980, I found that there were lots of well-educated and well-experienced personnel who cared about their jobs. They told me that there were no plans or proper policies and that they did not know what to do. They emphasised that the processes of the Islamic revolution were too quick and that managers were unable to plan educational television policies in accordance with the revolution's demands. I recognized that the dilemma was not personnel, but rather a lack of organizational structure, planning, and a reliable policy for educational radio and television, which could be coordinated with the objectives of the Islamic revolution (Soroush, 1980: 14).

The Islamic government found that the educational television under ERTI was expensive, inaccurate, and not oriented towards meeting real educational needs in Iran. They argued that when many areas nationwide did not have access to basic educational necessities such as classrooms and qualified teachers, educational television, which was not being used properly, was useless and a luxury.[9] Taheri (2000) also says,

> educational television in pre-revolutionary Iran was occupied with provision, maintenance, and observation rather than with the improvement of programme quality. ERTI tried to overcome these obstacles and complete the set-up phase; some activities such as observing how television was used in the classroom and evaluating its effectiveness were in progress.[10]

Arian Roshan (1985: 16) argues that ERTI did not conduct adequate studies and research on Iranian educational needs or cultural and economic issues. The plan

[9] Ahmad Talebinezhad, Executive Manager of the projects of IRIBEN at ETC, interviewed by Mahdi Hamzeh, 12 April 2004, Tehran-Iran.

mainly relied on foreign experts who did not have comprehensive understanding of Iranian educational obstacles. He adds that overall, the communication between ERTI and educational organisation was inefficient and unable to orient and prepare teachers for such technology.

Taheri (2002: 31) mentions that the ERTI tried to bring television into all schools to assist teachers in better teaching, but this failed in reality. In fact, television for educational purposes was incompatible with teachers' culture and knowledge of teaching; therefore, there were some resistance to the technology. He emphasises that the initial idea of the establishment of educational television was very valuable, but the cultural basis was not yet in place.

6.6.1 IRIB and Educational Objectives (1979-2002)

In post-revolutionary Iran, educational objectives became a central issue rather than part of the broadcasting intention. Ayatollah Khomeini, founder of the Islamic regime in Iran, identified the main function of IRIB as a 'public university'[11] in 1979. He pointed out that 'radio and television should be employed as an apparatus for teaching all people' (Taheri 1999: 5).

However, although IRIB was designated as a public university, it was far from well-known educational broadcasting services such as distance learning, or supplements to formal and academic education (like the Open University in Britain, for instance). In fact, the initial reason for this designation was to remove western cultural values from Iranian society and recreate Islamic principles instead.

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[10] Bijan Taheri, Chairmanship domain, and consultant to deputy of planning and research at IRIB, interviewed by the author in 10 February 2000, Tehran-Iran.

[11] *Daneshgah_e Omoomi*

Ayatollah Khomeini criticised the policies of radio and television under the Pahlavi regime as immoral tools for misleading people. He believed that a good radio and television organisation had to be managed morally and be free from negative western influences in order to guide and educate people appropriately. He pointed out that

> ...if radio and television are implemented as educational instruments, far away from being misleading as it was in the past; if they were aimed towards moral and cultural and other issues, which are useful for young people, the whole nation will be educated in the right ways; otherwise, [radio and television] will mislead all(1982: 75).

Relevantly, in 1980 the Islamic Assembly of Iran (*Majlis_e Shora_ye Islami*, or parliament) modified the legislation of the new government under Islamic law and ratified acts and articles for IRIB as a public university. In particular,

> Article 5—IRIB as a 'public university' has to assist the expansion of public development and knowledge in faith, political, social, cultural, economic, and militarily contexts.[12]

Until 2002, IRIB was concerned that educational programming for general purposes in several areas, including educational programmes which are still broadcast on different networks of IRIB, have to meet the following objectives, as defined in Article 33: 'Increase public general knowledge and encourage them towards science and technologies, which corresponded with social improvement'.[13]

Thus, IRIB as a 'public university' centralised educational objectives in order to develop Islamic culture and values against the common functions of radio and television around the world, which are largely dependent on imported western programmes and are subsequently under the influence of western culture. Hence, the

[12] Regulation of general strategy and principles on IRIB's programmes, Chapter 1- General Principles, p.7
[13] Regulation of general strategy and principles on IRIB's programmes, Chapter 4: Cultural Programmes p.10

regulations of IRIB as well as its educational objectives have a great tendency towards Islamic values. Article 9, for example, states that:

> the spread of Islamic culture, the creation of an appropriate environment for human edification and the refinement and improvement of moral scholarship, and the acceleration of the complement of Islamic revolution throughout the world are the main objectives of IRIB as a public university. These objectives will be provided by orthodoxy, educational, news and entertainment framework for programme making (IRIB Charter 2001: 20).[14]

However, IRIB never considered any tangible practical management for the public university, as Nasser Onsori (2001), former head of IRIB Network 2 and deputy of IRIB Network 1, mentions,

> Unfortunately, such an important strategy like the 'public university' has not yet been employed by IRIB, so according to the lack of clear definition on this issue, IRIB has failed to follow such an objective properly.[15]

But Mohsenian Rad (2003) entirely disagrees with the idea that radio and television should function as a public university and argues that

> [a] 'public university' is an ideological or political aspiration phrase, and it is not possible to analyse its objectives scientifically. This is because the functions of the university and media are different. The university has a specific structure and specific function, which are quite different from media. Two different things with different structures can be compared or replaced when [they] at least have same functions.[16]

Apart from the moral educational objectives, which had been offered by IRIB in several productions, there was also a scattering of formal educational programmes addressed to the Iranian national curriculum at different levels. However, due to the

[14] IRIB Charter, General Guidance of IRIB's Staff, Deputy of Research and Planning, Second Edition, October 2001, p20.
[15] Questionnaire, 3 September 2001, Tehran-Iran.
[16] Mahdi Mohsenian Rad, Senior Lecturer in Media and Communication, Imam Sadegh University, response to questionnaire, 10 November 2003, Tehran-Iran.

unstructured broadcasting schedule, many unfinished courses, too much unreasonable repetition and a lack of reliable links between programme content and educational authorities, it cannot be claimed that a healthy formal educational television has resulted. In addition, as formal and general educational programmes were broadcast on mainstream television programmes, it was difficult for viewers to clarify the timetables. In fact, there were ambiguous borders between these different educational objectives, which puzzled viewers and decreased production goals.

In fact, the 'public university' has remained a spiritual slogan for IRIB rather than a distinctive and firm policy of educational production. However, after the Islamic revolution had long been established in Iran, IRIB ultimately took the 'education' part more seriously and formally by inaugurating IRIB Education Network as a separate and dedicated educational channel.

6.6.2 IRIB Education Network [IRIBEN](2002-2007)

In line with worldwide improvements in educational aids and new technologies for teaching and learning, in 1998, IRIB proposed the establishment of an educational radio and television network. The main aims of the proposal were to provide nationwide audiences with more formal and informal education and to provide equal opportunity for all people with different educational needs.

Therefore in 1999, a proposal for a new television channel distinctively dedicated to educational purposes as an education network was offered by IRIB. Taheri (2000) discusses the main planning issues for the establishment of IRIBEN, arguing that a severe shortage of schools means that the formal educational authority in Iran is not able to provide education for the whole Iranian population, and that

IRIB with its broadcasting power and access to all houses in the country could assist the educational system. IRIBEN can also offer education equally to all pupils and adults in various circumstances and establish a standard educational value for the whole nation.[17]

In 2000, the Iranian Third Socio-Economic and Cultural Development Plan of 2000-2004[18] was published, and under Article 167-D, the Islamic Assembly of Iran approved the proposal for a new IRIB Education Network:

> In order to promote accessibility of the society to general, technical, vocational, and propagation education and higher education, IRIB will prepare the required programs through cooperation with the pertinent agencies; and, using the existing network and by creating new educational networks and reciprocal relationships, will take measures in the light of its charter to develop and improve the quality of education in different fields. For the purpose of scientific support for the educational programs, IRIB will form ad hoc committees together with each of the concerned executive agencies.[19]

Subsequently, after former national educational broadcasting services under the NIRT had been suspended for nearly 23 years, IRIB launched an Education Network as separate television channel in October 2002. The general objectives of the IRIB Education Network are to provide, produce, broadcast and distribute educational programmes, materials and medias in order to support, deploy, and generalise based on real social needs to elevate religious, cultural, scientific and artistic information for all people. These broad objectives are aimed to cover the four following areas:

a) foundational and basic education;[20]
b) public education;

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[17] Statement by Bijan Taheri, Chairmanship domain, and consultant to deputy of planning and research at IRIB, interviewed by author, 10 February 2000, Tehran-Iran.

[18] *Barnameh Sevom_e Tosseh_e Ejtemaee, Eghtesadi, va Farhangi*

[19] Third Socio-Economic and Cultural Development Plan of 2000-2004 (IRAN) Part Two: Sectoral Affairs, Chapter 21, Culture and Art, Mass Communications, and Physical Education, http://www.salamiran.org/IranInfo/State/Constitution/, (08 February 2003).

[20] Here meaning primary and secondary schools and teacher training.

c) higher education; and
d) vocation education.

At the beginning, the programmes of IRIBEN were broadcast on Channel 3 as a temporary transmitter and in a few months it hosted on a separate channel. At this stage, the IRIB appointed representatives to liaise between the IRIB and other institutions, which were involved in educational productions. The IRIB representatives are responsible for evaluating and selecting programmes to broadcast.

The Educational Technology Centre (ETC), which is the main institution for educational production in Iran (especially for schools), re-edited its programmes into 15 to 20-minute clips to cover some time slots on the education network. In addition, the KarAmad Company, an independent television company in Iran, offered the IRIB 700 minutes of programmes in maths and science for primary schools (Shahbaazi, 2001).

In summary, IRIBEN planned to use the latest scientific methodologies in education used in other countries and offer them to the whole nation to make reforms to reduce these obstacles to the development of the Iranian educational system. It is also assumed that IRIBEN would be able to introduce new educational methodologies, with new and innovative ideas, to help reform the structure of the educational system in Iran (Taheri, 1999:15).

6.6.3 Educational Technology Centre [ETC] (1979-2007)

As mentioned earlier in this chapter, the other major institute in Iran which is active in using audiovisual materials in schools is the Ministry of Education. In post-revolutionary Iran, while formal educational and schools broadcasting disappeared

from IRIB, ironically such activities were re-established on a minor scale by the Ministry of Education of Iran.

In 1979, the Administration of Audio Visual and Educational Television, the Centre of Educational Publication (*Markaz_e Entesharat_e Amoozeshi*) and the General Administration of Libraries and Documents Centre (*Edareh Kol_e Ketabkhaneha va Markaz_e Asnaad*) were merged into the Bureau of Educational Aids and Libraries (*Edareh Omoor_e Komak Amoozeshi va Ketabkhaneha*), which had been producing partial educational productions with its black and white television studio.[21] In 1980, the Research and Curriculum Organisation (*Daftar_e Tahghighat va Barnamehrizi_ye Darsi*) in the Ministry of Education established the Office of Research in Art Tasks and Model Making (*Daftar_e Pazhoohesh_e Omoor_e Honari va Nemooneh Saazi*) [ORATMM].[22] It independently set up a research venue in order to create a new generation of music and arts to coordinate with the Islamic revolution and revolutionary morale.[23]

Until 1981, owing to the lack of reliable equipment, ORATMM had no video production. A selection of educational programmes and duplication for schools in the provinces were therefore its only services; however, this was far from its primary objective. From 1981–87, although the television centre in ORATMM had various technical equipment which it had collected from throughout the country, the resolution of cameras was too poor to broadcast programmes in a standard condition

[21] Statement by Ali Akbar MarAshi, Educational Specialist, interviewed by author, 16 March 2000, Tehran-Iran.
[22] ORATMM is not a formal abbreviation for the Office of Research in Art Tasks and Model Making; it is created by the author for brevity.
[23] Ibid 3.

(Babazadeh, 2002).[24]

In 1987, Japan offered ORATMM a colour television studio and necessary technical equipment as a cultural present (the equipment was to be distributed in three phases). Consequently, technical restrictions on ORATMM's capability evaporated and it started planning new educational television productions. During the first stage, in order to help primary schools, ORATMM began making programmes that were relevant to pupils' school textbooks.[25] These programmes, which were accompanied by formal textbooks, were sent to different educational regions to help teachers review their teaching methodology (Mehrabi, 2000).

Since 1987, with the gradual development of technical equipment and studios, this office has enlarged its activities to support education. It also re-launched the International Scientific and Educational Cultural Film Festival (renamed the ROSHD International Scientific, Educational and Cultural Film Festival in 1989), which had been suspended during the revolution in 1979. In 1990, ORATMM was renamed the Educational Technology Centre (*Daftar_e Technology_e Amoozeshi*) and its technical equipment and studios continued to gradually improve.

The main objectives of the Educational Technology Centre (ETC) are to provide educational audiovisual and multimedia aids for the Ministry of Education in Iran. It introduces different aspects of educational technology to pupils, teachers, headteachers and parents, and also conducts some research in the use of educational technology in the processes of learning and teaching. They also provide methods and

[24] Ibid 3.

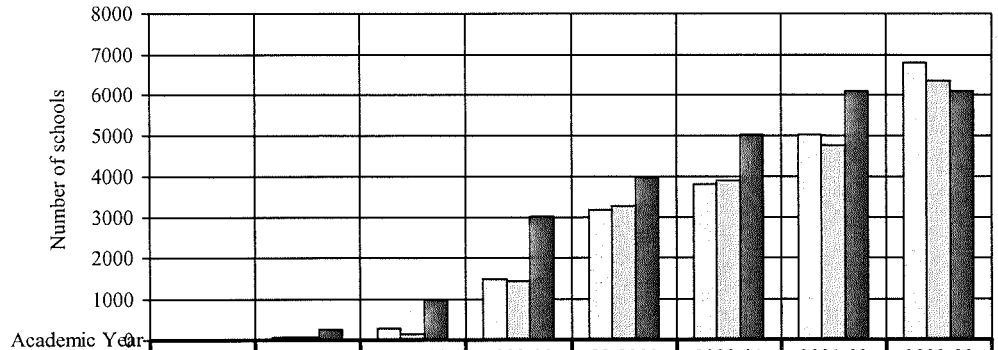
[25] Schools in Iran (from primary to high schools) have standard textbooks, which are distributed nationally by the Ministry of Education.

design, produce, and evaluate the materials of educational media, and evaluate learning materials to determine whether they are relevant to the national curriculum. But during the last decade, the most important objectives of the ETC were to introduce and provide different types of educational technology to schools nationwide. Therefore, a project called the 'ROSHD Plan' came into action in the mid-1990s.

6.6.3.1 The ROSHD Plan

In 1995, the ETC established educational media support for schools, the 'ROSHD Plan' (*Tarh_e Roshd*). The plan, which is based on the design, production and delivery of educational media such as audiocassettes, videos, and educational software, aims to support schools that are capable of realising the plan (e.g., schools that are equipped with video and TV sets and places for screening).

Figure 6-1 Quantitative development of the ROSHD Plan



	1995-96	1996-97	1997-98	1998-99	99-2000	2000-01	2001-02	2002-03
Primary	0	60	280	1480	3180	3820	5000	6810
Secondary	0	60	140	1440	3280	3910	4750	6356
High schools	18	250	1000	3000	4000	5000	6100	6100

Source: Educational Technology Centre, 2003

The main objectives of this plan are to:

1. shift the teaching methodology from single media to multimedia;
2. offer equal educational opportunities;
3. increase and equalise teachers' technical capabilities;
4. make teaching methods more convenient;
5. motivate students to increase their capabilities to meet the educational authorities' objectives; and
6. improve educational quality through visual media to increase learning speed, the stability of education, and students' level of knowledge.

The plan was also designed to be compatible with the Iranian national curriculum for primary, secondary, and high schools. In the academic year 2002-2003, 19,226 schools of different levels were being supported by the plan. The following chart (Figure 6-1) shows the quantitative development of the ROSHD Plan from 1995-96 to the 2002-03 academic year.

6.6.3.2 ROSHD International Scientific, Educational and Cultural Film Festival

In order to support learning with audiovisual facilities and to build a better relationship between educational technologies and teachers, educational experts and the public, ETC runs one of the oldest international film festivals in Iran (established in 1969). The ROSHD International Scientific, Educational and Cultural Film Festival aimed to foster exchange of international experiences in educational media and encourage filmmakers to focus on scientific, educational, and cultural subjects.

This festival screens scientific, educational and cultural films in Tehran and some provinces. Evaluations by ETC show that the festival has been successful

among students, and is also a platform for young filmmakers to participate and screen their films and videos.

6.7 Educational television in Iran at other institutes

In addition to the state sectors, a number of companies and institutes have been involved with producing educational films and videos in both pre- and post-revolutionary Iran.

6.7.1 The Centre of Iranian Cultural Improvement for Children and Youth (*Kanoon*)

Kanoon (*Kanoon_e Parvaresh_e Fekri_ye Koodakan va Nojavanan*) was established in 1965 as a governmental company, dependent on the Ministry of Culture and Higher Education. In 1981, it separated from this ministry and joined the Ministry of Education. It is related closely to the Ministry of Education both in its duties and administration. *Kanoon* presents an understanding of the real environment to children and young people through an informal educational process. It publishes books, produces long and short films, and produces educational entertainment, stories, and songs on cassette in order to achieve this objective. Its main source of revenue is the sale of its productions and educational services. It also receives some subsidies from the state government.

6.7.2 Iran Educational Industry's Software Company (1992-2002)

In early 1992, the Educational Industry's Software Company (*Sherkat_e Narmafzarha_ye Sanay_e Amoozeshi*) established a television studio in the centre of Tehran in order to make educational programmes for pupils in nursery/preschool

(infant school), primary school, guidance school, high school, and college. Although the company was running under private company regulations, it is basically a subsidiary of the Educational Equipment Industries (EEI) of Iran. The Ministry of Education founded and supports the EEI and its subsidiaries in the production and provision of educational aids. They produce most of the educational aids in Iran to meet the Ministry of Education's requirements.

The main objectives of the Educational Industry's Software Company was to produce and publish educational textbooks, charts, posters, and leaflets as educational aids; produce educational television programmes; and dub foreign scientific and educational programmes. It is the only EEI subsidiary that produces educational video programmes. The programmes were based on the Iranian national curriculum, and education offices at the Ministry of Education apply for the programmes.

In 2002, the Ministry of Education declared the ETC the main centre for educational audiovisual aids. In addition, with a stable budget, the ETC launched Internet and Intranet as well as distance and e-learning in the same year. The ESC co-produces various educational aids with the ETC.

6.8 Conclusion

This chapter revealed that education, as a part of overall broadcasting functions, has occupied a supplemental position in both pre- and post-revolutionary Iran. While such services on some occasions became more distinctive, due to various events they were also fragmented and temporary.

The history of broadcasting in Iran reveals that implementation of radio and television for educational purposes is in fact surrounded by unstructured (TV.I and Tehran's ETV), overambitiously planned (ERTI), isolated (ETC), ideologically slogan based (IRIB), and inexperienced (IRIBEN) production models. TV.I and Tehran's ETV were the first producers of educational television in Iran, and hence, due to the lack of adequate experience and knowledge, the productions were naturally not structured very well. The fact that the programmes simply put a teacher in front of a camera and broadcast live (to compensate for the lack of recording equipment) reveals some of the obstacles to early educational broadcasting in Iran. The ERTI, on the other hand, was planned comprehensively, but there is evidence that it failed to meet educational needs in appropriate relation with cultural and economic issues. ERTI was a big step in Iranian educational broadcasting history, but it was based on an undeveloped foundation and had overambitious intentions.

The ETC, as successor to Tehran's ETV, is the oldest institution in Iran to be involved with audiovisual materials for formal education purposes. But it has not been taken seriously for consulting in either pre- or post-revolutionary Iran.[26] In addition, the ETC has always suffered from a lack of broadcasting platform, due to projects like ROSHD Plan, which lets them deliver their educational productions directly to schools. However, after the inauguration of IRIBEN they are now scheduling ETC's productions to make up for a shortage of schools programmes.

This chapter also revealed that in post-revolutionary Iran, IRIB centralised 'education' around moral and cultural issues and identified the function of radio and

[26] For instance, there is no representative from the Education Ministry of Iran or ETC at IRIB for planning new educational television.

television as a 'public university'. But this ambition was never planned or brought into action practically, and when it was enacted it was not relevant to formal educational and school broadcasting. Hence the 'public university' remained a spiritual slogan for the IRIB in order to produce broadcasting materials with Islamic values.

IRIB Education Network or IRIBEN re-established formal educational broadcasting after more than two decades, and although formal educational materials have their own television channel for the first time in Iranian broadcasting history, recent practice (2002-2004) is not very promising. In fact, apart from some exceptional programmes, the main production styles of IRIBEN after four decades of educational and schools broadcasting in Iran are frozen in the form of a 'talking head'.

According to the objective of this investigation, in the next chapter I will examine and analyse two samples of Schools Television from the United Kingdom and Iran in detail. The historical studies of educational and Schools Television in the United Kingdom and Iran, in addition to theoretical issues of this investigation, will support this approach.

Chapter 7

COMPARATIVE STUDY OF SAMPLE SCHOOLS TELEVISION PROGRAMMES FROM THE UNITED KINGDOM AND IRAN

7.1 Introduction

Chapters 5 and 6 reviewed the establishment of educational and schools broadcasting in the United Kingdom and Iran, in order to provide a basis for further discussion. It was concluded that, in order to introduce any emergent model in Iran, underlying historical differences between the UK and Iran need to be acknowledged. This chapter details, compares and evaluates two specific schools programmes in relation to the educational ideas set out in Chapter 3 and their effectiveness with regard to the strategies for theories of learning and the production values adapted.

Firstly, the study will examine the programme structure of each sample in relation to its educational objectives. This analysis will help the study to find out how the educational materials have been implemented for school programmes in the UK and Iran. Secondly, the samples will be examined in relation to Gagné's nine events of instruction principles in order to explore the value of learning theories in each programme. And finally the chapter will conclude with a comparative study on the production values of sample programmes. To do this the production features of each sample will be reviewed and analysed in detail.

7.2 Background of sample programmes

Because the study is comparative, the selected UK and Iranian productions focus on the same topic and target audience. Although the fewer number of school programmes and topics in Iran restricted the choice of programmes, in the spring of 2001 two new proposals for Schools Television were commissioned at BBC School and Channel 4 Learning, both of which were similar to certain educational productions in Iran. These were a 5×20 minutes science programme at Channel 4 Learning (a proposal by Eagle and Eagle Production) called 'The Nature of Scientific Inquiry', targeted for students studying science at Key Stage 4, and a 6×20 minutes math programme for Key Stage 3 (KS3) entitled 'The Maths Channel' at BBC School.

'The Maths Channel' was finally selected as a sample to analyse for a number of reasons. First, in Iran, the IRIB Education Network chose to run a series of math programmes targeted at Grade 5 (equal to KS3 in the UK) for its first year of broadcasting in 2002. These programmes were a new initiative that enabled the Educational Technology Centre to examine production formats like narrative, animation, and entertainment. Second, the planning and creation of maths programmes is normally difficult for a production team, and producing a successful educational programme on an abstract topic like math is even more challenging. Hence, the interpretation of abstract mathematical concepts into audiovisual materials by a production team at BBC Education, which could reveal their capabilities on such difficult issue was an appropriate case for analysis in this study. In addition, I also offered an observation opportunity on the process of the production of 'The Maths Channel' by the BBC. Such

experience and knowledge was mainly implemented for the discussions on production models and criteria in forthcoming chapters.

7.3 Sample Schools Television programme in the United Kingdom: 'The Maths Channel'

'The Maths Channel' is initially a 120 minutes[1] of a spoof satellite TV station which is divided into eight parts and air various styles of educational television that are targeted to cover KS3 maths on the following topics:

1. numbers and the number system: place value decimals and rounding;
2. numbers and the number system: fractions and percentages;
3. numbers and the number system: factors and prime numbers;
4. calculations;
5. algebra;
6. shape and space;
7. measures; and
8. data handling.

The programme is designed to be used in one to five-minute segments, with teachers being able to choose topics from the above index on demand (Appendix I).

7.3.1 Numbers and the number system: place value, ordering and rounding and decimals

This is the first part of 'The Maths Channel', which was selected for detailed analysis. It is produced using a variety of television production styles and different locations and contains six segments: 'Check It Out', 'Deadly Division', 'Kenneth Comfort', 'Olympiad', 'Street Maths', and 'Weather Report'.

[1] 'The Maths Channel' later has re-edited into 12×10 programmes.

In addition to these segments, is a channel news studio is used to link these sections and signpost changing topics, and as an index for teachers who would like to choose a specific section for their class. It also uses humour to encourage viewers to pay attention to forthcoming segments.

7.3.2 Characters and their functions in the programme

Due to the show's combination of various locations and production styles, there are a number of different characters in this part of programme.

Jeremy Bodmas (On-screen Host) is the channel's humorous in-studio news presenter who introduces topics and links different parts of the programme to one another. He is young (in his mid-twenties) and, while he would like to follow the model of the 'cool presenter' like Jeremy Paxman, he has to cope with technical failures and tasteless scripts, which make the programme, seem like a sitcom on some occasions.

Jessica Tangent (On-screen Host) is the studio co-presenter. She is in her early twenties and has a good sense of humour. Jessica is the only character on 'The Maths Channel' who is not a comedian. In some parts of the programme, she delivers mathematical information and facts directly to the audience; in other words, she represents the teacher in the programme. She mediates between real life and mathematical facts and rules in order to orient pupils toward solutions. In 'Kenneth Confront', for example, (a spoof math investigation story) she monitors Kenneth's struggles with maths and fraudulent sandwich sellers. Jessica encourages viewers to think about Kenneth's troubles and find a solution to his problems. She also fronts the 'Check It Out' documentaries.

Kenneth (On-screen Actor) is a young man in his early twenties who plays a spoof undercover investigator in 'Kenneth Confront', which is a narrative section of 'The Maths Channel'. He takes himself extremely seriously and cannot imagine why the rest of the world doesn't. Kenneth carries a camera hidden in his bag strap and provides a wide-angle point of view. If Jessica is more the teacher in the programme, Kenneth represents its target under-achieving audiences.

Baz (Off-screen Actor/Voice-over) is an undercover cameraman in 'Kenneth Confront' who never appears in person. Baz also carries a hidden camera in his bag in order to capture shots of Kenneth in action. He also joins Kenneth in some conversation, action, and humour.

Les (On-screen Actor) is a middle-aged male actor who plays a fraudulent burger-van owner in 'Kenneth Confront'. He knows how to play tricks with maths and overcharge customers. His position is that of an antagonist whom pupils would like Kenneth to confront. However, the only way to confront him is to know the facts and rules of how mathematics works.

Kelly Holmes (On-screen Host), a well-known British athlete and Olympic medallist, presents an interactive sport quiz called 'Olympiad' that addresses curriculum themes like place value in decimals and units of measurement. The presenter's profession has been used to link discussions on subject matter such as place value in decimals.

Kjartan Poskitt (On-screen Host) is an author of children's 'fun' math books and a former BBC presenter. He entertains pupils with maths puzzles at a variety of locations

in 'Street Maths'. He makes connections between mathematics and entertainment in order to encourage pupils to discover maths as an enjoyable subject.

Voice-over and Narration (Off-screen narrator). Some segments, such as 'Deadly Division' and 'Kenneth Confronts' (for the off-screen character Baz), are presented by voice-over and narration. In 'Deadly Division', which is made like a documentary, the narration is in the style of David Attenborough.

Segment 1: 'Check It Out'

This is the first segment of 'Numbers and the number system: place value, ordering and rounding and decimals', under the first theme of 6×20 'The Maths Channel' programme.

Check It Out: Educational objectives

The aim of this segment is to meet essential teaching objectives in the year 7 catch-up programme and to assist pupils to:

1. practise reading and writing numbers using figures and words, knowing what each digit represents;[2]
2. Understand conventions for writing large numbers (e.g., grouping or commas);[3] and
3. multiply (and divide) any positive whole number up to 10,000 by 10 or 100 and understand the effect.[4]

[2] (key) objective Numeracy Strategy, and "essential teaching objective" in a Year 7 catch up programme.
[3] According to the British National Curriculum for maths in Key Stage 3, pupils should be taught to use their pervious understanding of integers and place value to deal with arbitrarily large positive numbers (National Curriculum in UK website).
[4] (key) objective Numeracy Strategy Year 5

Check It Out: Overall format and structure

'Check It Out' is delivered like a documentary, which investigates the enormously high salaries earned by film stars such as Tom Cruise, who received twelve million dollars for his role in the thriller *The Firm*. Throughout the investigation, the number 'twelve million' is rebuilt to give students practice with the number's place value, and with writing the number in both figures and words. Removable digits on a giant cheque are reshuffled to make numbers of different sizes.

Check It Out: Introduction of segment

Each segment is introduced briefly during an interlude between programmes. These short introductions, presented in humorous form by Jeremy in the studio, prepare pupils for the upcoming programme. For instance, 'Check It Out', which is about large numbers, is introduced in the following way:

> JEREMY:
> And now, if your taste in numbers is big and beefy, then The Maths Channel's Jessica Tangent has the story for you...in 'Check It Out'. Jessica!

Check It Out: Production structure

Celebrity incomes have always been an interesting issue for public motivation. Large figures such as Tom Cruise's enormous wage for his role in *The Firm* or the cost of Jim Carey's personal chef in *Ace Ventura* are interesting examples of numbers which are highly likely to catch pupils' attention while simultaneously conveying underlying educational messages. In addition, these can help students to link abstract mathematical concepts to the real world.

The amount of Tom Cruise's wage is written and presented on a giant chequebook, which has two functions. First, it is in an exclusive position to represent numbers simultaneously in both words and figures. Second, chequebooks have a strong link with the real world.

The number 'twelve million' is shown as '12 000 000'at the beginning of this segment. This shows students the targeted answer from the outset (it shows them that twelve million is written as '12' followed by six zeros). This technique, showing students the targeted answer from the outset, is one way of 'scaffolding' the students' construction of knowledge — because it tells students "what to look out for" (Koumi, 2006: 144). That is, giving students the target answer, helps them to build their understanding of place-value from the subsequent presentation, which proceeds as follows. Reviewing the function of multiplying any positive whole number by 10 and 100 and understanding the effect, the presenter constructs the number twelve million on the cheque from the very beginning. She starts with the number 1 and multiplies it by 10. Simple video effects reshuffle the numbers (e.g., the number 1 moves to the left from Unit to Tenth) and the colour of the number changes to red to indicate the new place value. The presenter then adds 2 and makes the number 12. In further calculations, the number 12 is repeatedly multiplied by 10 until it reaches 1200. The place value and representation of each digit appear on a full graphic screen in place of the written figures in the chequebook. At one point however there is a problem with the exposition, in that the narrated words simply accompany the pictures and do not reinforce them. The words

used are "slap a two in HERE", accompanying the picture of the figure 2 appearing in the units place. However, it would have been preferable to say — "slap a two in THE UNITS PLACE" in order to reinforce the picture of the units place, — as Koumi (2006: 125) points out, there should be a synergy (a mutual reinforcement) between words and pictures.

Check It Out: Reinforcement

Reinforcement has been defined in the following way: the 'learning of a new act is strengthened when the occurrence of that act is followed by a satisfying state of affairs (that is, a reward)' (Thorndike, 1913 quoted in Gagné et al, 1990: 8). In fact, through providing extra examples, which repeat the same content from different angles, reinforcement will concretise and support the learning process. Hence, in 'Check It Out', the process of multiplying is suspended temporarily at 1200, and a new example emphasises the rules and effects for the same amount of digits and place values. This helps pupils understand the rules and place values before proceeding to large numbers such as millions.

The weekly costs of Jim Carey's personal cook in *Ace Ventura* provide further reinforcement. A giant cheque for the cook shows the number 'one thousand, two hundred, and five dollars' in words, and the pupils are asked to write it in figures. This question was constructed by the earlier $1200; hence, the pupils had already learned the rules and would therefore be able to apply them to writing 'one thousand two hundred and five dollars' in figures.

An optional 'pause point' follows this example to encourage and support pupils in constructing new knowledge based on their prior knowledge. In addition, pupils are able to discuss the problem with their fellow students and their teacher and interact with the television, which provides the answer afterward. The educational objective of learning conventions for writing large numbers and the use of space is achieved when the process of multiplication reaches 120,000. The space between zeros appears by animation in advance and reshapes the number into 120,000. The appearance of the space in an earlier animation had sensitised pupils for appreciating the meaning of the space now that it gets explained.

The ultimate definition of larger place values such as millions is not followed by any further multiplication, but is simply provided by some graphics and the presenter's explanation:

> JESSICA:
> A million is a thousand thousands: 1,000,000. So twelve million is written like this: 12,000,000.

Although the number 'twelve million' was introduced at the beginning of this segment and the pupils knew the target, slow learners may find this explanation very short, and that the structure of the number and new place value for 'million' is delivered very fast and inadequately.

Segment 2: 'Deadly Division'

Educational objectives

In 'Deadly Division', students are encouraged to divide mentally whole numbers and decimals by 10 or 100 and explain the effect (Year 5).

Deadly Division: Overall format and structure

A three-minute animation brings abstract concepts of maths to life. 'Deadly Division' is an illustration of a jungle of numbers in different shapes and values. Two birds, designed like: '÷10' and '÷100', attack and divide these numbers into smaller values.

Deadly Division: Summary

The process of dividing is portrayed as a factual programme: two "dividing" birds (10 and 100) circle for the hunt and attack the numbers. First dividing by 10, they attack 5000; it drops a decimal point after its final '0' and drags the final '0' to the right of the decimal point. Finally, the '÷10' carries off both the decimal point and the trailing '0' and makes the number 500.

Later, the focus is on dividing the number 9000. This time, '÷100' drops a decimal point after the final '0' of '9000'. As it attacks, the final '00' moves to the right of the decimal point and '÷100' carries it off, along with the decimal point, and decreases the value of the number to 90.

For the final action, '÷10' attacks the number 13. It drops a decimal point after the '3' of '13' and, during the attack, the 3 moves to the right of the decimal point. This

time, because the final number is not a zero, the 3 is not carried off, but makes the decimal number 1.3.

Deadly Division: Introduction of segment

Jeremy's introduction has been omitted in 'Deadly Division'.

Deadly Division: Production structure

This computer-animated part of 'The Maths Channel' provides a sophisticated and novel environment for inspiring learning. A wildlife documentary in a jungle of numbers and dividing birds is accompanied by narration in the style of David Attenborough, as well as by well-tailored music and sound effects.

Because animation has influenced mainstream television and pupils recognise it as an entertainment mediator, it is highly capable of conveying educational concepts, Wetzel et al. (1994: 131) mention,

> Animated graphics are able to display visual representations of events that would be impossible to capture in the real world because of their scale, speed, or complexity.

The animation in 'Deadly Divisions' has been deliberately constructed as an implicit environment and a vehicle for conveying educational material. Rieber (1991) recommends that animation should be incorporated only when its attributes are congruent with the learning task. 'Deadly Division' has consciously been designed to focus on the dividing process. Dividing birds symbolically act as denominators, animals represent the numerators, and the hunting process simulates the dividing operation and its effects. In addition, in order to ensure the comprehensible transmission of educational contexts, each attack (dividing process) is reviewed in slow motion. This has two

functions: first, the repetitions clarify the dividing process; second, they reinforce the achievement of the objectives. In terms of screenwriting, there is also good synergy between words and pictures and the programme delivers educational content that is elucidative, maximises clarity, and very likely to amuse pupils.

Although 'Deadly Divisions' meets the educational objectives in most areas, initial abstractions in production may cause distraction. As mentioned earlier, for example, the graphical birds are metaphors for dividers, and the process of dividing has also been created imaginatively. This 'double bill of abstraction' may be dangerous as abstract mathematical concepts are interpreted by other abstractions. As Rieber and Kini (1991, quoted in Wetzel, 1994: 98) mentioned, 'when learners are novices in the content area, they may not know how to attend to relevant cues or details provided by animation'.

As the target audiences of 'The Maths Channel' are the lower ability pupils in year 7, it might be difficult for them to understand those metaphors adequately. However, according to the result of the questionnaires in the UK and Iran, 'Deadly Division' is valuable for reinforcement or revision as the structure of production seemed able to impress the viewers effectively. This is also supported by Koumi (2005), who believes the animation of dividing birds concretised the reducing effect of the abstract act of division.

Segment 3: 'Kenneth Confronts'

Educational objectives

'Kenneth Confronts' focuses on carrying out column addition and subtraction of numbers including decimals (Year 6) and carrying out column addition and subtraction of positive integers less than 10,000 (Year 5).

'Kenneth Confronts': Overall format and structure

'Kenneth Confront' is a spoof 'live', secret camera, investigative documentary which spots rogue traders. In this programme, Kenneth, 'the investigator', targets a fraudulent burger-van owner who overcharges customers by performing mathematical tricks on a calculator. Because Kenneth has limited knowledge of maths, he is unable to confront the burger-van owner in time. Jessica, the in-studio presenter, is linked to Kenneth 'live' through a hidden camera on location, and Kenneth appears on a giant video wall display in the studio. Through audio talkback, Jessica encourages Kenneth to uncover more evidence and frequently warns him about overcharging and confrontation. Throughout the programme, Jessica interrupts the story to explain the problems and give maths instruction directly to the camera before returning to Kenneth.

'Kenneth Confronts': Introduction of segment

The second interlude in the programme directs pupils' attention to the next segment. Jeremy says things like 'we're bringing you the first-ever live hidden camera investigation' and 'fearlessly exposing mathematical scoundrels out on the streets…' in order to stimulate viewers' interest in 'Kenneth Confronts'.

'Kenneth Confronts': Production structure

Kenneth is in fact a metaphor for pupils who have below average numeracy skills, while Jessica represents a teacher who monitors pupils' problems and explains mathematical rules and facts to them.

'Kenneth Confront' uses a mixture of direct teaching and narrative production styles. This allows Jessica to intervene frequently and explain mistakes and rules directly to pupils. As Peter Mullarkey, the programme consultant, insists, 'teachers need the maths to be completely "unpacked" for them and delivered in a clear, didactic way'.[5] More importantly, Jessica's repeated appearances and explanations, as well as reminders to figure out 'what to make of it', prevent pupils from being over-absorbed by the amusing story.

For instance, when Kenneth is overcharged for the first time and does not know what is happening, Jessica interrupts the narrative:

> JESSICA:
> Now that can't possibly be right—can you see what's gone wrong?

She returns to the giant screen and reviews the secret camera:

> LES:
> Two pounds thirty-five, add four, equals six pounds thirty-five, innit?

Back to Jessica in studio:

[5] Notes on sample script by Peter Mullarkey, education consultant of the 'The Maths Channel'

JESSICA:

The burger cost two pound and thirty-five pence and the ketchup cost four pence, so the correct amount should only be a few pence more than two pounds thirty-five.

But Les has overcharged Kenneth by about four pounds. This is a delightful shock and will hook pupils' attention; also, while they are waiting for Kenneth's reaction at the climax of the story, another appearance from Jessica is an additional shock. In dramatic terms, the puzzled Kenneth, who is unable to confront Les, justifies this interruption. In addition, some shots from a hidden camera (Baz's camera) on location are also used to break the main angle of the programme and to maximise clarity. Hence, the narrative structuring of 'Kenneth Confronts' amuses but does not absorb pupils in order to make them aware of educational contents.

Understanding place value and how a calculator responds to decimal numbers is one of 'Kenneth Confronts' objectives. This is reinforced by a second case of this segment, when Jessica encourages Kenneth to order something else to find out what other tricks Les has, so that they can confront him.

Segment 4: 'Olympiad'

Educational objectives

'Olympiad' aims to help students order a given set of decimals with up to one or two places and round a decimal to the nearest whole number (Year 6).

'Olympiad': Overall format and structure

The presenter, Olympic medallist Kelly Holmes, appears against a chromakey[6] blue, with graphics and video clips from the 2000 Sydney Olympiad behind her. The programme is presented as a digital interactive quiz, which addresses topics such as place value in decimals and units of measurement.

'Olympiad': Introduction of segment

Within five seconds, Jeremy once again encourages pupils to watch the forthcoming programme. Music, the style of Jeremy's presentation, and scriptwriting signal the change of topic. The new stress from Jeremy on Olympic medallist Kelly Holmes in 'Olympiad' tries to capture pupils' attention.

'Olympiad': Production structure

The structure of 'Olympiad' is exciting; it uses sports clips, which are reassembled as mainstream television sport and similar to pupils' favourite programmes. Overall, it provides a great atmosphere for the revision of place value in decimals, as Gienke (2003)[7] notes such materials could not be easily reproduced by teachers for maths classes'. Using Kelly Holmes, a recognisable celebrity, as a presenter for this segment also is a good hook. According to the result of the questionnaires of this study in the UK and Iran this encourages pupils to watch the programme more actively.

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[6] 'Electronic equipment for inserting a 'subject' with a color background (e.g., blue) into video 'background'' (Millerson, 1993:212).

[7] Martin A. Gienke, Educational Media Expert, in questionnaire for 'The Maths Channel' 15 May 2003, Cambridge-UK

Athletes are always fighting against various rates such as times and measures; thus, decimals are vitally important for their overall achievement. Kelly Holmes' profession as an athlete allows the educational concept of decimals to be delivered through the example of sport in a coherent manner.

In addition, there are interactive sport quizzes interspersed throughout the programme. This also accelerates pupils' involvement and enables sustained concentration. For instance, they are challenged at a 'pause point' when Kelley asks them to state the best time in seconds for the men's final 100-metre race in the Sydney Olympiad. This is followed by a set of possible answers, all of which are numbers containing the same digits, but with different decimal point positions, thus having different values. Pupils have to know how to order decimals in order to find the answer. Animated zooming in and out clarifies the position of decimal points and the place value of the numbers on the number line. However, the speed of the animation seems excessive, especially for slower learners.

When pupils try to calculate Maurice Greene's winning time in the men's final 100-metre, or the length of Jonathan Edward's gold-medal-winning triple jump, or who took the bronze, silver, and gold medals in the women's pole vault in the Sydney Olympiad, they conduct particular mental activities. The task in the first and second examples is to understand number place value in decimals, while in the women's pole vault example it is to order a set of decimals. Such questions about sports stimulate pupils to link their own math knowledge with the programme's concepts.

Throughout the programme, a number of questions are left unanswered. For instance, in the closing sequence, no answer is given for a question raised about the men's final 4 by 100-meter relay. This is a reinforcement of previous questions, which students would be able to answer through easy repetition and which thereby build their confidence. It also works to consolidate and emphasise the necessity of pupils' further activities.

Segment 5: 'Street Maths'

Educational objectives

The educational objectives of 'Street Maths' generally focus on using known number facts and place value to add or subtract various numbers mentally (Year 6).

'Street Maths': Overall format and structure

In an open-top, sea-front bus, Kjartan Poskitt and some year-7 pupils are travelling through Scarborough. Kjartan performs some 'live' maths tricks and puzzles for the pupils. The explanations of mathematical principles are followed by animation and voiceover. 'Street Maths' both entertains pupils and portrays maths as an enjoyable subject.

'Street Maths': Introduction of segment

Jeremy introduces 'Street Maths' in the following way:

> JEREMY:
> And now, a man who always leaves the number buffet with a full plate—it's Kjartan Poskitt and 'Street Maths…'

Such scriptwriting could benefit from pilot studies because the target audience may not interpret terms such as 'buffet' or 'full plate' properly. In that case, the introduction to 'Street Maths' might mystify – and thereby cause further distraction during the segment.

'Street Maths': Production structure

Kjartan Poskitt, author of children's 'fun' maths books, combines mathematics and entertainment in 'Street Maths' to inspire and encourage pupils to discover maths as an interesting and pleasant subject.

'Street Maths' is a combination of pleasure, entertainment, and educational contexts. For instance, the stage for the 'Street Maths' is an open-top, sea-front bus, which is an unusual setting for teaching mathematics. The ultimate goal of 'Street Maths' is to reconcile pupils with maths. Accordingly, it uses both didactic and entertainment formats to restructure pupils' view of maths, to promote it as an interesting subject, and to emphasise that maths is easily understandable and even fun with its concealed rules and functions.

As shown in Figure 7-1, 70% of the programme time is dedicated to indirect teaching and is supported by audiovisual material in order to hook pupils' attention and make the maths content more enjoyable. On the contrary, only 30% contributed to the programme's educational objectives through direct teaching.

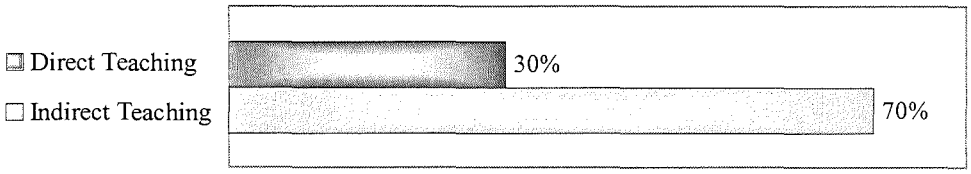

Figure 7-1
Direct and indirect teaching in 'Street Maths'

'Street Maths' delivers maths like a magic show, which contains unexpected events and surprises rather than presenting the content through straightforward educational materials. For instance, Kjartan presents place value as follows:

> KJARTAN:
> OK. I want you to try and count quickly in your head after me. I'm going to do three numbers, you do the fourth one: nine thousand and ninety-seven, nine thousand and ninety-eight, nine thousand and ninety-nine…
>
> KIDS:
> Ten thousand!

To reinforce this from a different angle, Kjartan explains the error to the audience on a number line. He further reinforces lessons on large numbers and place value by telling a joke about the age of a dinosaur's skeleton. While the humour is not strong, it reaffirms the programme's leisurely approach. The joke simultaneously stimulates pupils and delivers some measure of educational content.

Kjartan's next trick, which re-exemplifies the 'count on' technique of subtraction, simplifies the subject matter towards main objective. Pupils select three numbers between 1 and 9. Kjartan writes down the numbers (653), turns this new number around

(356) and subtracts one from the other (653 – 356). He writes the result (297) and again turns it around (792). He then adds the numbers (297 + 792) and the final result is 1089. The surprise trick is that the number 1089 has been written in the sand on the beach!

Gienke (2003) believes that 'Street Maths' is the most successful part of 'The Maths Channel' as he notes,

> 'Street Maths' is a clear exposition of what was happening and I feel would keep the interest of the viewers. It also provides good television materials such as cutting and use of actuality with nice surprise way of providing the answer in the sand. The programme overall succeeded in making maths enjoyable.[8]

This exercise provides suspense, surprise and a dramatic climax, as well as values that inspire and hooks pupils' attention, while conveying the educational content. As Koumi points out, 'pupils will not know why the trick works out, but would like to try it on others, hence gain esteem.'[9]

Segment 6: 'Weather Report'

Educational objectives

In 'Weather Report,' students learn how to order a given set of positive and negative integers, which is an 'essential teaching objective' in the year-7 catch-up programme.

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[8] Martin A. Gienke, Educational Media Expert, in questionnaire for 'The Maths Channel' 15 May 2003, Cambridge-UK.

[9] Jack Koumi, Educational Media Production Trainer, in questionnaire for 'The Maths Channel' 10 August 2003, Rugby-UK.

'Weather Report': Overall format and structure

'Weather Report' is presented in two-dimensional computer graphics using the chromakey technique. Jeremy's disembodied head works as a pointer that moves over a map of the UK and reports the temperature in various places. A number line is added to the graphics to clarify the description of positive and negative numbers. In addition to the sliding head on the map, blue and red arrows indicate different degrees in warm and cold places.

'Weather Report': Introduction of segment

Jeremy's introduction has been omitted in 'Weather Report'.

'Weather Report': Production structure

Jeremy's disembodied head signals the change of topic dramatically and hooks pupils' attention in an entertaining way. The words 'weather now' simply head the new segment for the pupils.

Positive and negative integers for different temperatures are ordinarily delivered in mainstream weather reports on television news broadcasts. Hence, 'Weather Report' is a highly appropriate vehicle for introducing such educational concepts, and also emphasises the link between maths and real life.

It also has an innovative style of performance, incorporating elements of both fantasy and videogame, which is able to stimulate pupils' imaginative abilities and hook their attention. While the design of Jeremy's head sliding over a graphic background, accompanied by comical music and sound effects increases the humour and allows for

the addition of more comic situations, the humour and educational material are carefully and consciously balanced to avoid any interference with the learning process.

Here, unlike his initial comic character, Jeremy for the first time takes a leading role in teaching and presents the weather report in a neutral tone. He simply adds shallow funny gestures while he moves over the UK map. In order to avoid interference, the gestures, comical music and sound effects occur when Jeremy's head moves over the map to reach a new point of information. The distance between one point and another is a good moment for regaining pupils' attention through humour. During the educational delivery, however, the humour disappears. While the sliding head still conveys continual visual enjoyment, essential data are delivered with little or no humour.

In terms of televisual techniques, 'Weather Report' is a very rich piece. For instance, the use of colour coding as visual metaphor to represent cold and hot places, the clarification of information about temperatures and number lines through the use of graphics and animation, the incorporation of music and sound effects, and Jeremy's moving, disembodied head in chromakey all contribute to the production of valuable television material.

However, the humour at the end of the segment, created by revealing Jeremy in chromakey through an electrical 'fault', is weak because it would be very difficult for pupils to understand. Gienke (2003) emphasises, 'this sequence is insulting the intelligence of viewers who, however backward or slow in maths, are very sophisticated

in reading the media language'.[10] If it were a response to pupils' curiosity, their lack of background knowledge about television technical process would prevent them from being able to interpret the material properly.

7.3.3 'The Maths Channel': Opening sequences

Leading title

A computer animated number ball spins and marks different numbers or maths signs. It delivers different calculation processes such as addition, division, subtraction, and multiplication. The movements and actions are synchronised by music and sound effects.

Establishing shots

Jeremy Bodmas and Jessica Tangent appear at the news desk in a wide shot of the presentation studio set. Jeremy introduces 'The Maths Channel' and forthcoming sections of the programme. Some graphics support this introduction to detail the contents of the programme.

Introduction for 'Number: place value decimals and rounding'

Jeremy introduces the first part of 'The Maths Channel'—'Number: place value decimals and rounding'—and its six sections. Short clip segments of the forthcoming programmes support the introduction as signposts.

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[10] Martin A. Gienke, Educational Media Expert, in questionnaire for 'The Maths Channel' 15 May 2003, Cambridge-UK.

7.3.4 'The Maths Channel': Closing sequence

Jeremy presents the final sequence of the programme in the studio.[11] He invites the audience to join him for the next programme. At this point, the lights suddenly fade, which makes him angry, providing comic relief for an enjoyable closing sequence. The credits roll and are superimposed on the final shots.

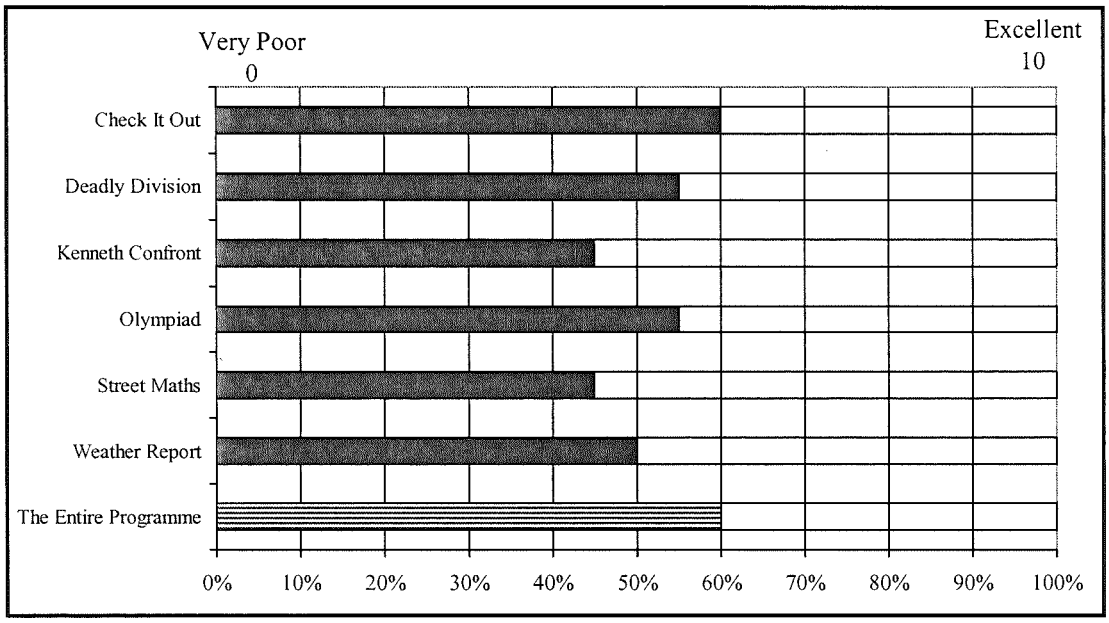
7.3.5 'The Maths Channel': An evaluation

According to the subject matter of this investigation, I examined the production values and educational objectives of 'The Maths Channel' with Iranian educational experts, teachers and television programme makers. To do this, firstly I translated the script of the programme and dubbed it into Farsi on VHS copies[12]. Secondly I designed and prepared a multiple-choice and open-ended questionnaire with 40 questions. The VHS copies and the questionnaires were sent to educational experts at 'ROSHD' Educational Technology Magazine, IRIBEN, and ETC in Iran for the evaluation. In all, the VHS videos were screened for 23 educational experts, primary teachers, and educational programme makers in different locations. Table 7-1 shows the overall results of the evaluation of each segment of the programme, which are scaled between '0' (very poor) and '10' (excellent).

[11] The original production of 'The Maths Channel' was two hours long, and closing sequence appeared at the end of the programme and not after ' Number: Place Value, Decimals and Rounding' section.

[12] The process of translation and dubbing (with the help of my wife) took three weeks in the summer of 2003.

Table 7-1 The evaluation of 'The Maths Channel' by Iranian experts



Despite the seemingly low scores, about 85% of the educational experts in Iran were strongly agreed that implementation of entertainment for education in 'The Maths Channel' would be a good model for Schools Television in Iran, and such structure could strongly stimulate pupils, and assist them to recall more educational concepts. For instance through a comparison comment one of the experts remarks,

> Theoretically we always talk about the importance of a happy environment in the classroom but in practice we do not know what to do. 'The Maths Channel' uses the environment that pupils would like to see, but in Iranian School Television, they have to watch merely another classroom with the teacher and students, which they already have in their own.

More than 80% of educational experts in Iran believe that 'The Maths Channel' can assist pupils to make better links between maths and real life, and makes the subject

interesting to learn. They also believe that the most segments of programme have been successful vehicle for educational contexts.

It also has to be mentioned that the experts, however were confident with the educational contents, as they mentioned that there is no geographical barrier for the content of 'Maths' but in translating into televisual materials they were anxious on cultural issues. They insisted that producers have to consider on such issues carefully, as may some of 'The Maths Channel' stories like 'Check It Out' might not be suitable for pupils in Iran. As a result, although most of educational experts believed that a programme like 'The Maths Channel', if produced very carefully, would be very effective for their classrooms, due to cultural issues, more than 70% of them prefer to use 'improved' Iranian Schools Television and not dubbed programmes from other countries.

7.4 Sample of Schools Television in Iran: 'Maths for Grade 5'

The second part of this chapter is dedicated to an analysis of a sample educational television programme in Iran, 'Maths for Grade 5'. This programme was made by the Educational Technology Centre (ETC) in 1996 as part of a maths series for primary schools and was selected by the IRIB Education Network (IRIBEN) for broadcasting in the 2002–03 academic year.

'Maths for Grade 5' is divided into small segments lasting between two and seven minutes. Hence, for comparative study, it was easier to select those parts, which are similar to segments of educational programmes in the UK, specifically, 'The Maths

Channel'. It should be also pointed out that in the Iranian educational system, subjects such as 'large numbers', 'place value', and 'decimals' are taught in years (or grades) four and five at primary schools. Hence, the parts of 'Maths for Grade 5', which were comparable to 'The Maths Channel' have been selected to enable a more precise comparison. This segment focuses on examining the following selected segments of 'Maths for Grade 5':[13]

1. Large Numbers
2. Place Value
3. Multiply by 10, 100, and 1000
4. Multiply by 1000
5. Mental Calculations
6. Decimals I
7. Decimals II
8. Decimals III

7.4.1 'Maths for Grade 5': Style of the programme

The programme set is a replica classroom constructed in a television studio, with some clips on location and two-dimensional computer animation used occasionally to support the objectives.

7.4.2 'Maths for Grade 5': Characters and their functions in the programme

A teacher, three schoolboys in grades 5, a puppet, and voice-over are the main characters in this programme.

[13] The national curricula for maths in the UK and Iran are different. The materials for maths in year 7 (11-year-olds) in the UK are delivered for years 4 and 5 in Iran (9 to 10-year-olds).

Maths Teacher (On-screen Host) – A male teacher in his mid-forties presents educational concepts by lecturing to pupils in the classroom. He is also the programme's consultant on educational materials.

Pupils (On-screen Host) – Three schoolboys in grades 4 and 5 are in the television studio classroom and participate in a model maths class. They have a very formal relationship with the teacher.

Greedy[14] (Puppet) – Greedy is a puppet representing a grade 5 schoolboy who makes the programme slightly more informal. The clever, naughty, and sometimes funny character of *Greedy* is designed to stimulate viewers and break up the formal classroom atmosphere.

Voice-over (Off-screen narrator) – In some segments (e.g., animations and clips on location) a narrator presents educational concepts.

Segment 1 'Large numbers'

'Large numbers'Educational objectives

The aim of the programme in this segment is to meet the essential teaching objective in grade 5 in order to assist pupils to:

- understand and employ numbers in daily life
- gain more recognition of number place value
- recognition of number positions
- gain more recognition of writing big numbers (6 digits or more)
- add and subtract numbers using their place values

[14] The original name of the puppet in the programme is '*Shekamoo*' in Farsi. But as this name was chosen to characterise the puppet and make it funnier, in this study, for better communication with the main theme of the programme, I used the translation of the name in English.

'Large numbers': Overall format and structure

The programme in this segment is presented in narrative style. *Greedy* is in a store shopping for a bicycle, but the prices are very high and his savings are insufficient to purchase even the lowest-priced one.

'Large numbers': Production structure

As early as the opening sequences of this segment, there is a lack of synergy between audio and video, which diminishes the programme's quality. Although the camera pans the bicycles and *Greedy* reads the prices aloud, the audiovisual materials are not synchronised. Pupils see the label on one bicycle for which the price was read much earlier and visa versa. In addition, the sample of large numbers is very difficult to read and this lack of appropriate audiovisual information creates ambiguity. For instance, reading and understanding large numbers like 634,850 or 287,800 requires sufficient time and must be synchronised with proper audiovisual materials in order to be effective. In addition, the sample of large numbers is irrelevant to the normal price of bicycles in the real world, and this puts extra pressure on pupils in reading and understanding the concepts. Subsequently, the storyline is not engaging and does not contain a proper narrative structure. There is no beginning, middle, or end; no climax or calm moments or so on, which are recognised as factors of a good story (Len Brown, 2002).[15]

[15] Len Brown, Associate-commissioning Editor Channel 4 Learning, interviewed by the author, 19 August 2002, London.

The high prices of bicycles and the shortage of *Greedy's* savings are the climax of the narrative; however, according to the following script, some monologues are confusing:

> GREEDY (talking to himself):
> It is too high for me.
> This one is too low.
> This one is very expensive!
> This one is really inexpensive!
> Look at this one, its colour is terrible!

The phrase 'really inexpensive' is a misleading cue for the target audience and counter-productive to the entire objective of this segment. Pupils may ask, if the bicycle is inexpensive, then why he is unhappy with his savings?

Also, as noted earlier, the audio and visual materials do not synchronise, which prevent pupils from being able to properly compare the large numbers and prices; there is no reference to a particular visual material for the inexpensive bicycle either. Insufficient production process, even for a minor verbal error, could damage the reliability of educational concepts and also confuse viewers. The effects of this segment are decreased by an immature storyline and lack of production capability to interpret the educational concepts into appropriate audiovisual materials. The programme simply introduces some large numbers, which are unsuccessfully linked to a real life situation.

The delivery of educational ideas and objectives is conducted according to the favoured model of 'lecturing' throughout the following segment, in which a maths teacher explains verbally and straightforwardly how to read, write and understand the values of large numbers.

'Large numbers': Set design

Creative and attractive visual elements are important factors in captivating pupils' attention. These values, which are recognised by Nikos Metallinos (1991) as compositional factors and criteria for analysing educational television, are mostly neglected in 'Maths for Grade 5'. For instance, the set design for the bicycle shop—a real shop—is full of clutter. All the accessories belonging to the shop interfere with other visual material and educational purposes and therefore lead to an inferior production.

Careless set design can seriously devalue a programme, and while negative responses from target audiences might not be instantly obtained, it can damage producers' reputations, particularly in comparison with mainstream television or imported broadcasting materials. In fact, set design is as important as the front window of a shop, which invites, stimulates, and hooks viewers to step inside the shop and buy something. For a television programme the very least that a producer wants is to keep his or her viewers in front of the television. In contrast to this bare minimum, the efforts of educational television must be much greater: they have to encourage pupils to watch the programme consciously. Furthermore, as IRIBEN broadcast school programmes in parallel with mainstream channels, this issue is considerably important.

Segment 2: 'Large numbers and place value'

Educational objectives

In the segment on large numbers and place value, students are introduced to reading and writing large numbers and understanding place values.

'Large numbers and place value': Overall format and structure

A maths teacher lectures for a class of three pupils and a puppet. In addition to the whiteboard, he uses coloured marbles and rubber bands, which are fixed on a cardboard as educational aids to represent the place values of large numbers.

'Large numbers and place value': Production structure

This is in fact a conclusion for the previous segment, which provides more information about large numbers and reviews the 'thousands' unit in the number place value. A teacher in a conventional classroom talks to the pupils while a few video cameras follow the teaching process. The question here would be why should pupils be keen on watching such programmes when they can practice the same lesson with their own teacher in the classroom? Why should teachers use this video when they could deliver the same materials themselves and more interactively? The inclusion of a puppet in the programme, which does not add any value, cannot justify this type of production.

Reasonable teachers are looking for materials, which would be impossible for them to deliver in the classroom on their own. A duplicated teacher on videotape naturally is unacceptable and may be annoying, unless perhaps when used for in-service training, as

Richmond (2001) emphasises ' the teachers might like it because its helping their job, but the children won't enjoy it, because it would be too boring'.[16]

'Large numbers and place value': Puppet in the programme

The rationale for including a puppet in this programme has not been clarified properly. *Greedy's* character is vague and wanders between the metaphor and reality of a schoolboy. The main weaknesses of the puppet's performance can be traced to inaccurate pre-production process, when appropriate room for fantasy, exaggeration, comedy, and all those things that a puppet could use to stimulate pupils has been neglected. Simply adding a puppet to the programme is not related to other features of the segment. In addition, the incapability of realising the potential of a puppet does not underpin the production. And finally the name of the puppet '*Greedy*' is totally irrelevant to the subject matter (at least for this programme). Hence, as the name of the puppet does not provide any link to the educational objectives it might cause distractions for the programme.

<u>Segment 3:</u> 'Multiply by 10, 100, and 1000'

Educational objectives

The objective in this segment is to understand and explore the processes of multiplication of numbers with 2 or 3 digits.

[16] John Richmond, Commissioning Editor Channel 4 learning [1993-2003], interviewed by the author, 07 March 2001, London-UK.

'Multiply by 10, 100, and 1000': Overall format and structure

A teacher in the classroom practices multiplying numbers by 10, 100, and 1000. As educational aids, there are some wooden cubes in rows, with each row containing 10 cubes.

'Multiply by 10, 100, and 1000': Production structure

According to Figure 7-2, about 92% of this segment is delivered directly to the viewers via the 'talking head'.

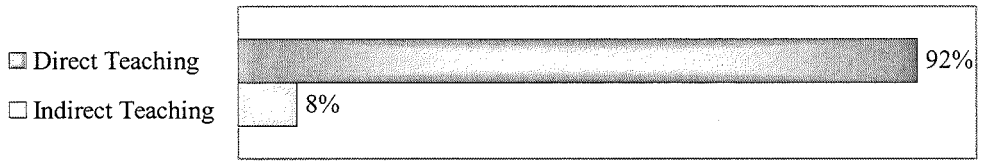


Figure 7-2
Direct and indirect teaching in 'Multiply by 10, 100, and 1000'

This is just a reconstruction of an ordinary classroom that cannot take full advantage of the medium. Teachers in Iran, who are overwhelmed by the number of subjects in textbooks and strict timetables, are under enormous pressure and have very limited time for using television or doing other activities in the classroom. Under such circumstances, television has to be justified by providing non-substitutable and valuable educational materials to schools.

Segment 4: 'Multiply by 1000'

Educational objectives

In 'Multiply by 1000', the goal is to help students understand the process of multiplying numbers with two and three digits by 10, 100, and 1000.

'Multiply by 1000': Overall format and structure

'Multiply by 1000' is presented through very simple two-dimensional animation. Numbers in figures, which are accompanied by monotonous music, flash and change places. In this segment, 1000+1000+1000+1000+1000=5000 is replaced by 5×1000=5000, and a voice-over explains the process.

'Multiply by 1000': Production structure

Initially, animation has great capacity to elucidate abstract subjects and can offer a variety of imaginary materials. Fantasy, imagination, abstraction, and values, which can be created by animation, are totally neglected in this segment. The use of some simple moving and flashing numbers which are presented at a very slow pace (Appendix II) cannot stimulate pupils and does not add any extra value to the learning process. More controversially, it must be said that this sequence is insulting to the intelligence of viewers. Pupils aged 10-12 who have been overwhelmed by various high quality animations on mainstream television will ignore such inferior materials. More importantly, the multiplication process is presented as a shortcut for addition, is counter-productive to the formal teaching guidance for maths in Iran:

> as far as the concept of multiplication is the main issue, the relationship between multiplication and addition should not be posed. Some teachers

> define multiplication by summarising the adding process, which is not accurate. The concept of multiplication has to be identified first. (Shidfar et al, 2001:47)

The necessity of correcting such double standards has been neglected by the programme's makers, which is a failure in terms of educational objectives.

Segment 5: 'Mental Calculations'

Educational objectives

In this segment, pupils have to be able to calculate mentally and predict and estimate quantities for their daily use (Shidfar et al, 2001:1).

'Mental Calculations': Overall format and structure

'Mental Calculations' is also delivered in narrative style. A taxi driver tries to multiply, mentally, the fare of four passengers. The story is presented in two versions. In the first, the taxi driver needs fifteen minutes to do the calculation, whereas in the second version he finds the answer within a few seconds.

'Mental Calculations': Production structure

This segment delivers educational concepts through a very simple narrative format; in terms of production values, it is the richest segment of the whole programme.

Although throughout nearly 60% of 'Maths for Grade 5' the teacher insists on teaching the topic word by word and eliciting positive reactions as proof of the learning process, this segment is on the contrary presented metaphorically. Pupils are encouraged to think about the rules of 'rounding' and doing mental calculations. In fact, for the first

time in the programme, educational material is not delivered unpacked; rather, it underlies the narrative.

The question of how the taxi driver can resolve the problem of mentally multiplying 95 by 4 remains unanswered, left for pupils to answer. For the videotape version of the programme (for the ROSHD Plan), it is appropriate to pause between or at the end of the two versions of the story. A suspension at these points can enable pupils to have further discussions in-group or with their teacher about the subject mater.

Segment 6: 'Decimals I'

Educational objectives

'Decimals I' is dedicated to understanding, adding and subtracting decimal fractions.

'Decimals I': Overall format and structure

A classroom teacher practices decimal numbers, using green-painted cards to identify ratio fractions. The teacher explains the examples orally and writes them on the whiteboard. The process is accompanied by pupils' questions and reactions, and by the puppet in the classroom.

'Decimals I': Production structure

Narrative has a great capacity to attract attention in any kind of media, more especially in television. As Richmond (2000) notes 'the power of narrative is to hook people into knowledge in a way, which engages their imagination, memory and cognition affectively as well as analytically'. This power should thus be harnessed for

educational purposes. In 'Maths for Grade 5' there is little attempt to employ such potential. In addition to the failure of the puppet to effectively create an informal environment, the potential of narrative structure is also neglected. The lack of a good story, well-planned outlines, and proper rehearsals therefore make even small attempts ineffective in stimulating viewers.

For instance, as a result of very poor preparation, the process of gaining attention through the following dialogue is a failure. When the teacher prepares to draw a table for the place value of decimals, *Greedy* and *Reza* engage in the following dialogue:

REZA:
Is it the multiplication table?

GREEDY:
It is more a street map to me!

This dialogue is supposed to make pupils laugh and subsequently increase their attention to the upcoming educational concepts. Surprisingly, however, these dialogues occur before anything is drawn on the whiteboard. This kind of naïve production style can damage the structure of the programme and distract viewers rather than gain their attention.

Although communication between teacher and pupils (including the puppet) seems like that in an ordinary classroom, the relationship is not natural. Pupils are able to answer almost all of the questions posed by the teacher. Their positive responses to all questions, even new issues and complicated maths rules and even before any instruction, decreases the programme's credibility. Through these kinds of fake actions and

reactions, the teacher is convinced that the learning process is running successfully; it seems that the producer expects the same reaction from the viewers.

Segment 7 'Decimals II'

Educational objectives

As in 'Decimals I', the educational objectives of this segment are to understand, add, and subtract decimal fractions.

'Decimals II': Overall format and structure

The narrator raises several questions about the conversion of grams into kilograms and the answers are instantly delivered by voice-over and some moving numbers in two-dimensional animation.

'Decimals II': Production structure

Although the use of animated numbers, which simply cross the screen along to the sound of monotonous music creates a different environment for educational purposes, it does not realise the full potential of animation. The segment totally fails to meet basic criteria for quality animation such as having a stimulating storyline; imaginary and appealing characters, shapes, colours, and backgrounds; and more importantly, an appropriate pace for the programme.

Some of these obstacles are related to budget shortages and the limited time available for production. Nevertheless, the creation and use of such immature animation cannot be justified. More crucially, most animated sequences could be replaced by

simple graphics in order to meet the same objectives; therefore, there is an inadequate rationale for delivering the programme through animation.

Segment 8: 'Decimals III'

Educational objectives

Again, this segment on decimals focuses on understanding, adding, and subtracting decimal fractions.

'Decimals III': Overall format and structure

The conversion of grams into kilograms is reinforced by an example from real-life maths. A grocer weighs some material, which is followed by some questions from the narrator regarding the conversion of grams into kilograms. In addition, an unanswered question presented at the end of this segment checks pupils' ability to write numbers in figures. As an extra example, a confectioner weighs some pastries and the voice-over asks pupils to write down the weight in figures.

'Decimals III': Production structure

A grocer puts some material onto the scales and then adds some weighing stones. A camera zooms towards the stones and graphics of numbers in figures are superimposed on the screen. The voice-over explains the process and provides questions and answers in order to support the objectives. According to the script of 'Maths for Grade 5' (Appendix II), the educational concepts are provided orally; the pictures convey very little information.

Although the location of the grocery can help pupils make a link between maths and real life, the illustrations do not make good television material. In fact, the whole event is a simple process of weighing and the educational concepts are not interpreted through proper audiovisual capabilities. For instance, there is no reference to particular visual material for the process of converting kilograms into grams. In addition, the very slow pace of editing and changing shots, slow and monotonous music, images of an old grocer with a very serious expression, and inferior set design fail to meet the initial needs of the targeted age group. Although an appropriate voice-over accompanies the visual materials, it is not able to correct for these problems on its own.

An additional example, which is linked to the real world, reinforces the subject matter at the end of this segment. A confectioner weighs two kilograms and three hundred grams of pastries on the scales. The scale's needle indicates the weights and the voice-over asks pupils to write the numbers in figures. As in 'Mental Calculations', this could be an appropriate moment to pause in order for pupils to share and discuss the subject in small groups and with their teacher.

7.4.1 'Maths for Grade 5': Opening sequence

Leading title

A series of names of the production crews the programme's credits, is superimposed over the cover of a maths book for grade 5. A piece of background music accompanies the appearance of the credits.

Establishing shots

Camera pans across different bicycles in a store. The voice over of '*Greedy*' reads the prices aloud. Later there is a very close up shot of '*Greedy*'.

7.4.2 'Maths for Grade 5': Closing sequence

The rest of the credits are superimposed over the cover of a maths book for grade 5. A piece of background music accompanies the appearance of credits.

7.4.3 'Maths for Grade 5': An evaluation

Although this programme represents a new generation of educational television in Iran and uses more entertainment, humour, and informal methods for attracting pupils' attraction, about 71% of the programme is still a 'talking head-style' production (Figure 7-3).

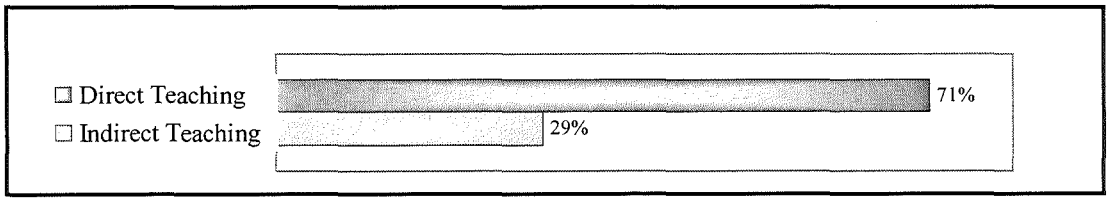


Figure 7-3
Direct and indirect teaching in 'Maths for Grade 5'

Concerning the requirements of high-quality educational programmes, Len Brown points out that 'one of the greatest qualities is the ability to captivate and engage people'.[17]

[17] Len Brown, Associate-commissioning Editor in Channel 4 Learning, interviewed by author, 19 August 2002 London.

The lack of challenge, interaction, and stimulating materials has earned the programme a reputation as 'boring'. As Palmer (1974: 317) points out, 'monologues and dialogues rarely sustain attention when presented in the form of a talking head'.

In fact, the structure of the programme is close to what MacMahon (1997, quoted in Meyer, 1997: 88) calls the 'transfer theory ', which is described as:

> in this theory delivery is a central concern, with considerable effort expended on preparing the material and on devising 'effective' methods of transfer. Whether or not the message is received or relevant is not a major concern.

Most of the programme time is allocated to the teacher (presenter) and his lecturing. It might therefore be more useful as a role model for in-service teacher training rather than for pupils. However, the presence of a puppet like *Greedy*, which is designed for pupils, indicates that the target audience is not teachers specifically. This creates ambiguities for the programme's target audience. In fact, too much speech during a television programme might be appropriate for teachers' INSET, but not so for 9 to 11-year-old schoolchildren. Viewers at this age naturally expect televisual materials to inspire and motivate them rather than being another classroom activity.

7.5 Comparative Analysis

The above two samples of Schools Television programmes in maths for 9 to 12-year-olds from the UK and Iran have been analysed in detail separately thus far, the following segments present a coherent comparative study of the programmes. In fact, as mentioned in Chapter 3 of this study, I broke down the structure of sample programmes

into their fundamental elements, in order to analyse their relation with in particular, a) theories of learning and b) televisual production structures and their issues of interplay (see Appendices I and II). To do this, firstly the educational objectives of both sample programmes were examined with *Gagné's* nine events of instruction and secondly a comparative study on televisual production features concluded this chapter. These have assisted the study to assess the strengths and weaknesses of Schools Television production in both institutes comprehensibly. These also enabled the study to locate and collect relevant information, to sort, to classify, to put in sequence, to compare and contrast, and to analyse part/whole relationships between theories of learning and the production approaches. Although it has to be mentioned that the employment of learning theories and television production values in Schools Television overlap one another; subsequently, some sharing of analysis in both areas was inevitable.

7.5.1 Comparative analysis: theories of learning in sample programmes

The following analysis, based on theoretical issues in Chapter 3, represents a shot-by-shot revision of how the sample programmes in the UK and Iran have incorporated an educational objective. As mentioned in Chapter 3, Gagné's events of instruction, which are based on behaviourism and cognitive theory of learning can be employed for designing, making, and evaluating educational television programmes. Through comparative analysis, the educational objectives of sample programmes will be examined in relation to Gagné's learning events.

7.5.1.1 Gaining attention

The first step of the process of instruction is to involve pupils in the educational context and gain their attention. As seen in Appendix I, the structure of 'The Maths Channel' utilises many techniques of television production such as graphics, animation, music, and other factors like well-known presenters (Kelly Holmes) and narratives, which, in addition to their production values are also valuable factors in 'Gaining attention'. Such structure, which according to figure 7-4 covered 35% of the time of 'The Maths Channel' can ensure the reception of coming instruction that the school programme will give to pupils as stimulus.

In contrast, the structure of 'Maths for Grade 5' is primarily based on direct lecturing, in which there is a tiny degree of television production value. However, Appendix II shows that overall 20% of the programme is dedicated to gaining attention, but such a value is somewhat misleading. When a teacher tries to capture pupils' attention in the studio with direct teaching context, at most it offers other teachers a model of instructional planning rather than providing good television material for viewers. In fact only 11% of the programme employs techniques and uses production values that are particular to television (Figure 7-4).

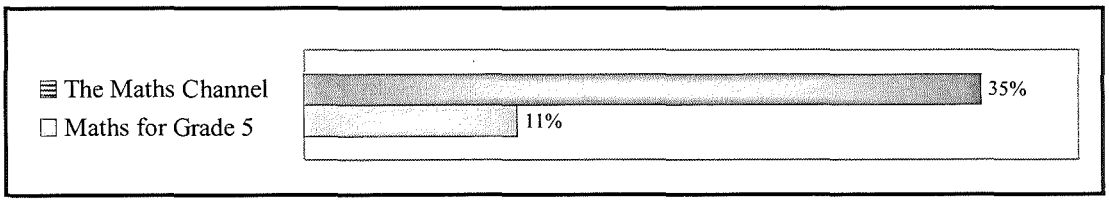


Figure 7-4
The amount of time devoted to gaining attention in each sample programme

It also has to be noted that as the target audiences of 'Maths for Grade 5' mainly watch the programme at home, the importance of gaining attention is even higher; otherwise, the show will lose its audience.

> Capturing and holding an audience in the face of competition from commercial entertainment programming has been and is a major concern of educational television. Viewers have the option of switching at any time from educational content to comedy, drama, games, or sports (Bryant et al, 1983: 222).

When a programme fails to meet the crucial objective of 'gaining attention', it could also fail in other instructional events. Television needs to hook pupils' attention effectively. As Judith Tyrer, producer of 'The Maths Channel' points out,

> Children will switch off and end up learning nothing if the programme goes over their heads or is perceived to be 'boring'. I came up with the ideas based on knowledge about the kind of programmes young teenagers enjoy watching on TV at home (Tyrer, 2001).[18]

Hence, it would be very difficult to keep pupils from ages 9 to 12 interested in a school programme that uses unattractive materials. Pupils who are free to tune the television channel at home must be self-motivated at a very high level to follow an educational programme like 'Maths for Grade 5'—something, which is, according to their age group, doubtful.

[18] Judith Tyrer, Producer and Co-director of 'The Maths Channel' in questionnaire, 8 December 2001, London-UK.

7.5.1.2 Informing the learner of objective

Teachers have to describe the aim of a task to pupils, and they have to know how to employ and use the knowledge when giving demonstrations. The amount of time allocated to informing learners of objectives in both programmes is between 3% and 5%. However, viewers of 'The Maths Channel' watch the programme in the classroom, where the teacher can explain the objectives before screening the programme. On the contrary, viewers of 'Maths for Grade 5' are mainly pupils at home watching without supervision; thus, the little amount of time spent to inform them about objectives in such circumstances can be misleading or produce vague objectives.

In 'The Maths Channel', the presenter explains the objectives of the programme in a humorous manner, which makes it interesting and informative piece of video to watch. But in 'Maths for Grade 5', objectives are delivered by moving captions and background music. Although the moving captions cannot be considered to have a high level of production value, the music serves as a recognisable feature. It produces signals in order to inform learners of objectives throughout the programme.

7.5.1.3 Stimulating recall of prerequisite learned capabilities

This event reminds pupils of the prior knowledge relevant to the current lesson and aims to show how the knowledge is connected. This provides a framework, which assists pupils to learn and remember.

Apart from the limitations of the analogue television system, which forces the delivery though a one-way path, and as pupils watch the programme in school, teachers

in the classroom can employ such events before showing the programme, but there is no sign of the use of such an event in 'The Maths Channel'.

In 'Maths for Grade 5' there is only one sequence that fulfils the above event of instruction. In the 'Decimal I' segment, the teacher recalls viewers' previous knowledge about ordinary fractions in order to use it for teaching new subjects like decimals. However, the event is delivered orally to pupils in the studio and not to the viewers.

7.5.1.4 Presenting the stimulus material

This instructional event provides all audio and visual materials such as text, graphics, pictures, slides, audio etc. Furthermore, they are accompanied by appropriate presentation styles in order to stimulate learners. The presentation of stimulus materials constitutes the main body of any kind of educational audiovisual programme. Here, learning concepts have to be translated into audiovisual contexts appropriately. Television programmes, as well as other media and classroom activities, emphasise features and facilitate the learning process.

'The Maths Channel' stimulates pupils through a variety of innovative production styles such as investigative documentary, creative animation, narrative, and entertainment. 'Maths for Grade 5', however, is based on the lecturing style and stimulus material is mainly delivered directly by a maths teacher. Hence, to facilitate the appropriate evaluation of production values in each programme, the provision of stimulus by television production has been separated from direct teaching materials.

Table 7-2 presents the value of stimulus materials in each programme in terms of both television production and direct teaching materials.

	Presenting stimulus by televisual materials	Presenting stimulus by direct teaching materials[19]
The Maths Channel	27%	14%
Maths for Grade 5	13%	26%

Table 7-2
Presenting the stimulus material in sample programmes

As seen in Table 7-2 and the script of the programme (Appendix I), 27% of 'The Maths Channel' presents stimulus by televisual means, while 14% was assessed as direct teaching material. In contrast, only 13% of 'Maths for Grade 5' stimulates pupils by using the capabilities of television production and 26% of the programme is presented through direct teaching. 'Large Numbers', 'Mental Calculations', and parts of the programme which link maths to real life are presented primarily with televisual materials in 'Maths for Grade 5', while the rest of the programme is loaded with direct talking and teaching with minimal or no use of stimulus materials.

7.5.1.5 Providing learning guidance

This instructional event is providing different channels of guidance in order to make learning simpler. As seen in Table 7-2, it provides semantic encoding and cues for retrieval. 9% of 'The Maths Channel' and 3% of 'Maths for Grade 5' supply such material.

[19] Or non-televisual teaching materials, here the functions of television production are merely for transmitting the educational contexts.

In 'The Maths Channel', visual effects like the slow motion used in 'Deadly Divisions' reinforce learning concepts (e.g., number place value). In this example, when 5000 is divided by 10, the division process is repeated in slow motion. This reinforces the material from a different angle in order to "keep the learners on track" the approach is one of learning through exploration and discovery.

In 'Kenneth Confronts', when the fraudulent sandwich seller uses a calculator to add £2.35 (for a cheeseburger) and 4p (for ketchup), the result is incorrectly £6.35. This example works as a form of indirect learning guidance which encourages pupils to resolve the problem before the presenter reveals the answer. Only a narrative video programme could justify the presentation of such a false result, which is obviously intentional and used to encourage participation in the process of discovery. At the end, Jessica (the presenter) explains the place value of numbers on a calculator, which further reinforces and re-exemplifies previous events.

In 'Maths for Grade 5', there is just one sequence that provides learning guidance. A voice-over in the segment 'Multiply by 1000' recalls the previous knowledge of viewers about replacing lengthy additions with multiplication:

NARRATOR:
Wow! So many additions!
Don't you think there would be another, easier way?

NARRATOR:
Yes, multiply.

This guidance provides different angle on multiplication by 1000 and reinforces the previous segment.

7.5.1.6 Eliciting performance

Eliciting performance encourages learners to do something with newly obtained behaviour or practice and to reveal clearly how confident they are about their progress. In educational television, which is always accused of having one-way communication and a passive nature, interaction with pupils and recall of the learning material are vital processes. This is in fact a big challenge for a medium like television to meet the need to 'elicit performance' which requires the learner to prove their learning based on what has been taught, As Koumi (1991:134) points out,

> you can't sustain students' fascination unless they achieve a penetrating understanding of the subject. Hence an underlying objective for educational television is that learners should frequently experience 'delighted revelation' as they suddenly grasp a difficult concept.

There are six pause points in 'The Maths Channel', in which pupils are able to interact and recall their knowledge about the educational concepts dealt with in the programme. In 'Check It Out', Jessica (the presenter) makes the number 1200 from 12 and asks pupils to write the number 'one thousand two hundred and five' in figures during the pause point. Pupils then have to recall the rules that governed how 1200 had been written. Such activities connect media and pupils.

'Olympiad' is the main segment for eliciting performance in 'The Maths Channel'. Presenter Kelly Holmes provides four pause points and multiple choice questions, including those where students have to discern the place value in decimals for the winning time of the men's final 100-metre and the winning length of Edward's gold-

medal triple jump. Also, the largest number in the pole vault and winning time in the 4 by 100-metre relay are provided for comparison and practice in ordering a set of decimal numbers. These pause points assist teachers in facilitating class or group discussions and in evaluating pupils' understanding of the programme material and educational concepts.

On the contrary, as 'Maths for Grade 5' is mostly based on direct teaching, a maths teacher elicits performance in 16% of the programme. However, this assessment is limited to communication between teacher and pupils in the studio and not with the viewers. But, there is a sequence in 'Decimals III', which incorporates audiovisual materials for eliciting performance to some extent. A confectioner weights two kilograms and three hundred grams of pastries on scales, while a voice-over asks viewers to write the number in figures, thus providing a link between maths and the real world. For those home viewers, however, the lack of supervision again will cause problems with the assessment of such contents delivery.

7.5.1.7 Providing feedback about performance correctness

This event corrects, and analyses learners' responses, and behaviour and encourages them to find the solutions for their problems in learning progress. Such instruction event in 'The Maths Channel' occurs after pause points. When Jessica reveals how to write out the number 1205 in 'Check It Out', or when Kelly Holmes announces the answers to the sport quizzes, pupils are able to check their answers against those given on the programme. In both cases, the answers are provided in both graphics and animation, which, in addition to being attractive, are capable of delivering

answers clearly as a part of the learning process. For instance, the animated zooming in and out on a number line in 'Olympiad' re-creates number place values in pupils' imaginations and simplifies the understanding of the quiz answers.

In 'Maths for Grade5' feedback on correct performance is provided only by the teacher (presenter) in response to pupils in the classroom (studio). Such television production structure, as mentioned earlier in this chapter, does not contain any televisual value and is not based on reliable communication with the viewers. Moreover, as the students in studio provide correct feedback all the time, even such an attempt for this instruction event is counter-productive and will damage the programme's reliability. For instance one of the teachers in Iran argues: '...school programmes like 'The Maths Channel' are based on maths in the real world, but programme makers in Iran merely provide another classroom with a teacher and some pupils, who are all genius![20]

7.5.1.8 Assessing performance

Testing the learners and see whether they learnt the lesson or not, is the main aim of assessing performance. In analogue television, performance assessment is external to the programme event. While it is possible to raise questions for viewers and examine the answers, even as an outcome of the programme in relation to performance, in practice the ultimate assessment relies on teacher feedback. Programme makers will appraise the values of the materials and recover those segments as needed through the production

[20] Evaluation of 'The Maths Channel' Tehran-Iran, 10 June 2003.

process. Hence, according to Appendices I and II, this event of instruction is not realised either in 'The Maths Channel' or 'Maths for Grade 5'.

7.5.1.9 Enhancing retention and transfer

This instruction event aims to inform the learner about similar problems and encourages additional practices or a review of the lesson. A variety of questions, tasks, and practice exercises generalise the capability and enhance learners' retention and their capacity to transfer this ability to other contexts. 'The Maths Channel' and 'Maths for Grade 5' provide different levels of such material.

Questions about the men's 4 by 100-metre relay and the triple jump in 'Olympiad', which are accompanied by similar concepts within the programme, do not give the viewers answers. This challenges pupils to recall important information recently taught and use it to find the answers. In addition, these two questions follow pause points, which offer possibilities for further activities in the classroom.

Similar points also appear in 'Maths for Grade 5'. In 'Large Numbers', 'Multiply by 10, 100, and 1000', and 'Decimals I', the teacher gives viewers a number of tasks. It has to be mentioned, however, as this event of instruction is based on the idea that 'systematic reviews spaced at intervals throughout weeks and months' (Gagné et al., 1992: 198) are an important procedure for promoting retention, which is very difficult to do in a television programme.

7.6 Comparative analysis: televisual production structures in sample programmes

The second part of comparative analysis is a review of the production structures of Schools Television in the UK and Iran. To do this, the study of theoretical issues in Chapter 3 is employed and the initial structure and features of various dimensions of the production of 'The Maths Channel' and 'Maths for Grade 5' will be re-examined. This detailed analysis will reveal the functions of the production features in each sample programme and also support the study for further discussion of the compatible production models and criteria discovered in Chapter 8.

7.6.1 Production Style/Treatment

A traditional school classroom is normally characterised by a teacher who lectures to pupils. The easiest form of television production is to have video cameras record this event. However, although this would be considered an educational programme, it is far from utilising the capabilities of television for educational purposes. Educational television is not limited to lecturing or broadcasting an ordinary classroom to viewers, but also implies the delivery of creative materials in order to facilitate the learning process.

In both 'The Maths Channel' and 'Maths for Grade 5' there are sequences in which the programme delivers educational concepts directly to the viewers without using many (or any) television production techniques. These can be classified as 'direct teaching materials'.

In contrast, there are valuable television practices that underlie the educational concepts, and delivery is conducted through 'indirect teaching materials'. In fact, indirect teaching material, which is mainly delivered by narrative, is one of the most important production structures for Schools Television.

Making a television programme for educational purposes by using indirect teaching materials is a complex task. On the one hand, the programme should follow the educational objectives, and on the other, it has to make to most out off audiovisual capabilities. More specifically because both sample programmes are about maths, which is abstract and not visual, it is a very difficult subject to portray. In such circumstances, one of the main obstacles for producers and teachers is how to relate mathematics to the real world (Rosevaere, 1992: 298).

But there is evidence to show that television has very real educational uses. For instance, research at National Foundation for Educational Research (NFER) revealed that television might be particularly helpful in enabling learners to make connections between reality and abstraction (Sharp, 1995: 133). It has distinctive capabilities like motion picture and dramatisation, which can be used to enhance learning in some areas of mathematics in school. Or as Martin points out,

> ...television could use its powers to engage and to move, not equally across the range of activities that form a mathematical understanding but in those areas where dynamics, visual counter-point, and emotion can contribute to learning (1992: 315).

Figures 7-5 and 7-6 present the overall concentration of direct and indirect teaching materials in both programmes.

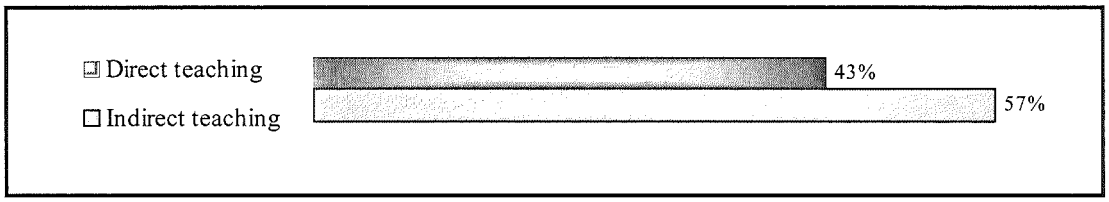


Figure 7-5
The Maths Channel

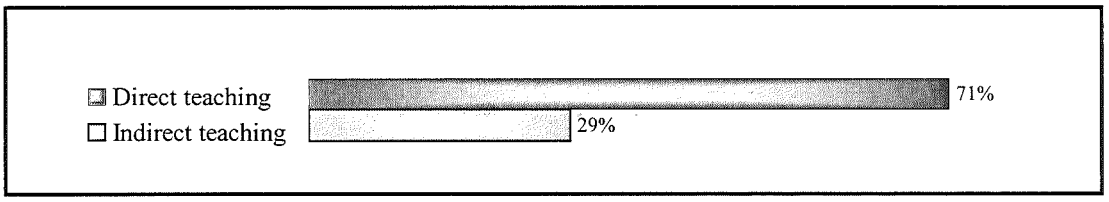


Figure 7-6
Maths for Grade 5

57% of 'The Maths Channel' is presented indirectly through audiovisual material and presenters provide the remaining 43% of the programme directly to the audience. However, the proportion of indirect teaching materials in 'Maths for Grade 5' is just 29%, while 71% is delivered by a maths teacher in the style of a lecture.

Both sample programmes in this study employed different production genres and formats such as narrative, direct and indirect teaching, talking head, edutainment and humour for various educational purposes. Table 7-3 presents the amount of time for all forms of production genres, and formats, which are used in 'The Maths Channel', and 'Maths for Grade4'.

Production Style/Treatment	The Maths Channel	Maths for Grade 5
Introduction Sequences	22%	4%
Interlude	3%	3%
Narrative	25%	18%
Talking Head	19%	61%
Didactic Voice	13%	12%
Edutainment	12%	1%
Humour	6%	1%
TOTAL	100%	100%

Table 7-3
Production Style/Treatment of sample programmes

7.6.1.1 Introduction Sequences

'The Maths Channel' contains six sections lasting from between 2 and 6 minutes, each of which is produced as an independent mini-programme. This is meant to assist teachers in making the sections compatible with their classroom activities; hence, they are able to choose one or more particular segments for each session. Accordingly, each section starts with a brief introduction, which allows pupils to understand the purpose of the section. Although the presenter, Jeremy, plays a key role in achieving this objective, each section includes some brief frames that introduce the programme to pupils.

Mini-programmes can also be found in 'Maths for Grade 5', but they are not planned for this purpose in advance. Rather, the programme is divided into short segments according to the needs of the IRIB Education Network. Some segments begin suddenly, without a proper introduction, and viewers must guess the objective. As seen in Table 7-3, only 4% of the programme provides general titles; however, even these are inadequate for those who watching the programme at home.

7.6.1.2 Interlude

The interlude is a quick shock during the segment, which is used to regain pupils' attention to the programme. As seen in Table 7-3, 3% of both programmes is interlude. Interludes in 'The Maths Channel' are pre-planned and strongly relevant to the programme. For instance, in 'Check it out', when the presenter is describing how to write $12,000,000 (Tom Cruise's wage for *The Firm*), a two-second shot of coins, accompanied by music, divides the presenter's performance into two parts (Appendix I, shots 33-35). This recalls pupils' attention and reinforces the programme's context.

There is just one example of interlude in 'Maths for Grade 5'. In 'Place Value', *Greedy* gives a fellow student an exaggerated description of the bicycle that he wishes to buy. This provides a break in the teacher's lecturer, gains attention and also reinforces the main objective (Appendix II, shot 27).

7.6.1.3 Narrative

As mentioned in Chapter 3 of this study, narrative and dramatisation, which can be recognised as fiction genre, dilutes the density of formal teaching materials and increases pleasure in educational television, it also has great potential for attracting attention and hooking pupils to the programme, thereby facilitating better delivery of educational concepts.

For instance, 'Kenneth Confronts' in 'The Maths Channel' or 'Mental Calculations' in 'Maths for Grade 5' deliver maths to pupils through narrative and

pleasure. However, in the educational sphere programme makers have to be cautious about the influence of hypnotism in narrative delivery. If the narrative was merely heavily amusing, pupils would not be able to follow the main argument of educational context. Thus, in 'Kenneth Confronts' the presenter deliberately interrupts 'Kenneth' in order to reinforce the educational objectives, and provide learning guidance (Appendix I, shots 99-105).

Narratives in 'Maths for Grade 5' ignore such a structure and, more crucially, do not follow educational content with clear conclusions or explanations. For example, details about rounding and multiplying numbers in 'Mental Calculations' are left without any discussion of related educational concepts (Appendix II, shots 70-84).

7.6.1.4 Taking head

Restrictions on time and budget and the lack of creative ideas and good storylines force producers to make school programmes at a basic level. This inevitably leads to too much 'talking-head style' production.

The talking head is used on average in 61% of 'Maths for Grade 5'. This disappoints pupils' initial expectations of a television programme. More significantly, this programme aims to be accessible by pupils at home and therefore has to compete with other television channels as well. On the other hand, 19% of 'The Maths Channel' is delivered via a talking head, which relates unpacked materials to viewers. Here, however, they are frequently packaged in more appealing material in order to retain viewers' attention. For instance, in part of 'Check It Out', Jessica talks to viewers for

seven seconds. This is instantly followed by a four-second interlude, which contains two shots of moving pictures, music, and sound effects that are relevant to the subject. The presenter then talks again for 5 seconds (Appendix I, shots 64-67).

According to the findings of this chapter, the structure of 'Maths for Grade 5' mainly follows MacMahon's 'Transfer Theory'. As mentioned in Chapter 3, the central issue for this theory is the implementation of behaviourist philosophies on learning process with a primary interest in the delivery of fixed truth to students. Hence, 71% of direct teaching (Figure 7-6) and 61% of talking head production (Table 7-3) in 'Maths for Grade 5' is evidence that such schools programmes cannot provide appropriate television materials. Such a production style failed to go beyond the traditional classroom, and still aims to fill the passive minds of students with knowledge and facts. However, such a teaching strategy might be successful in some real classrooms (specially for the followers of behaviourism), but still fail to provide attractive Schools Television. As Koumi (2006) points out 'delivering fixed truth for the case of mathematics is not a bad thing, but the transfer theory fails because it does not blend this delivery with opportunities for students' reflection and knowledge construction'.[21]

7.6.1.5 Didactic Voice

This production style and treatment belongs to the oral sources of the programme; when an off-screen voice-over or narrator explains the contexts of the programme straightforwardly to the viewers. For instance in 'The Maths Channel' shots 152-162 and

[21] Jack Koumi, Educational Media Production Instructor, (author's personal correspondence via email received 12 February 2006).

179-180 in 'Olympiad', or shot 139 in 'Weather Report' (Appendix I) employed such a style. According to table 7-3, about the same percentages of time is also dedicated to didactic a voice in 'Maths for Grade 5'. Shot 69 in 'Multiply by 1000' and shot 144 in 'Decimal II' are two examples of such a production style in 'Maths for Grade 5' (Appendix II). Analysis of audio sources, later in this chapter will explain more about such materials in the sample programmes.

7.6.1.6 Edutainment

As mentioned in Chapter 3 of this study, a Schools Television programme for better results has to be both educative and entertaining; it must be, as it is called, 'edutainment'. The way of delivering these 'two forces' in a balanced and appropriate manner is an important and sensitive issue in any kind of educational production. Michael Stevenson, the former joint director of Factual and Learning BBC, points out that

> ...'edutainment' is not the most elegant of words but it is a useful concept. It's about creating a bridge between the two forces of entertainment and education. Whether you regard this as education by stealth or simply ensuring that entertainment is not mindless, it's an important aspect of our services for children (2001a: 3)

12% of 'The Maths Channel' is delivered by edutainment. For instance, in 'Street Maths', Kjartan performs live maths tricks for pupils on the bus. Similarly, Jeremy's disembodied head moving over a map of the UK in 'Weather Report' combines both entertainment and educational materials (see Table 7-3).

In 'Street Maths', as pupils would like to find out how the tricks work, they are more likely concentrate on the programme, and therefore also on the underlying educational concepts that are continually delivered. And in 'Weather Report', electronic technique (chromakey) amuses viewers and provides examples of positive and negative numbers at the same time.

Only 1% of 'Maths for Grade 5' contains edutainment materials. As an example, in 'Multiply by 10, 100, and 1000', *Greedy* tries to count some wooden cubes one by one instead of using multiplication (Appendix II, shot 40). Or when the teacher in 'Place Value' asks for a number with five digits, the response of '*Greedy*' is the price of the bicycle instead of the number (Appendix II, shots 20-22).

7.6.1.7 Humour

Some parts of an educational programme have to be dedicated to humour if viewers are to remain motivated. As Sharp (1995: 182) points out, 'if pupils find a programme interesting and entertaining, they will better motivated to devote the mental effort to learn from it'. McGhee (1980, quoted in Chien, 1999: 199) observes:

> ...once action, animation, surprise, incongruity, etc. have captured the child's attention and directed it toward the desired audiovisual elements, humour provides one of the most effective means of sustaining directed attention.

Humour makes the educational contents slightly entertaining and it is not to be considered as having a significant impact on learning process. For instance, in 'Street Maths', Kjartan tells a joke about the age of a dinosaur skeleton. The joke is merely for fun, though it does call attention to a very large number as well.

In 'Maths for Grade 5', *Greedy* occasionally interrupts the class by talking about buying a bicycle. This attempt, however, is not particularly well structured, but it is capable of changing the formal atmosphere of the lecturing style of the programme. Regarding The segment on 'Mental Calculation', although it presents a very well structured television production and also employs some sorts of humour, the pace of the programme is very slow, and counter-productive to the overall production structure.

7.6.2 Audio Sources

Audio material, as mentioned in Chapter 3 of this study is should be used as one of the two main channels of communication for any kinds of audiovisual materials. Both sample programmes utilise some material, which is based on oral accounts and thus use human voices such as dialogue, monologues, narration or other sources of sounds like music and sound effects. Table 7-4 shows the percentages of time, which 'The Maths Channel', and 'Maths for Grade 5' have implemented for such audio sources.

Audio Sources	The Maths Channel	Maths for Grade 5
Dialogues [Narrative]	18%	6%
Dialogues [Didactic]	2%	67%
Monologues	18%	3%
Voice-over	16%	2%
Narration	4%	7%
Music	10%	6%
Background music	7%	6%
Sound effects	25%	3%
TOTAL	100%	100%

Table 7-4
Audio Sources of sample programmes

7.6.2.1 Dialogues

Dialogues in both sample programmes are delivered in two different styles, which are called for this study 'narrative' and 'didactic' dialogues. Those dialogues that deliver a story apart from conveying direct teaching materials are called 'narrative dialogues' and those that are merely providing educational facts and rules are identified as 'didactic dialogues'. It is clear that the structure of 'narrative dialogues' is closer to telling a story than it is to conveying educational materials. For instance in 'The Maths Channel' the conversation between Kenneth and Les in 'Kenneth Confront' are mainly based on narrative dialogues. Here, there is no attempt to deliver educational rules and facts, but the aim is instead simply the reconstruction of a real situation in which maths is used. It is question of maths in the real world. In contrast the dialogues between Kjartan and the kids in 'Street Maths', are informally structured; they are directing teaching materials and not narrative (Appendix I, shots 223-234). According to Table 7-4, 18% of dialogues in 'The Maths Channel' are delivered by narrative dialogues, while only 2% of them are delivered by direct teaching dialogues. In 'Maths for Grade 5' as much as 67% of the programme's time is delivered by direct teaching dialogues between the teacher and pupils in the classroom (Appendix II, shots 36-66). The structure of the programme here is mainly based on the teacher's talking, which is accompanied by some reactions from pupils. In fact, there is little attempt to use the capabilities of television; the programme's contents are mainly delivered by 'talking heads'. In contrast only 6% of the time of the 'Maths for Grade 5' was dedicated to narrative dialogues.

7.6.2.2 Monologues

The other channel for vocal information in a television programme is monologue, where, normally, a television presenter talks directly to the camera; this can also be considered a 'talking head' style. As Table 7-4 shows, 18% of 'The Maths Channel' is delivered by monologues. In fact, either for gaining attention (e.g., Appendix I, shots 3,4,7) or providing information, Jeremy or Jessica present the programmes' contents directly to the camera. In contrast only 3% of 'Maths for Grade 5' employs monologues, which are a part of the teacher's teaching process, when he asks viewers at home do some of the exercises (Appendix II, shots 30-33 or 66). However, as 67% of the programme is delivered by didactic dialogues, the main structure of 'Maths for Grade 5' remains in 'talking head' style.

7.6.2.3 Voice-over and Narration

Voice-over and narration, which are presented by off-screen speakers, have very similar functions. But for this comparative analysis, to better understand the structure of audio sources in sample programmes, I focused on voice-over and narration separately and defined a different structure for each of them. Voice-over is normally provided by the presenter(s) of a programme over other visual materials and sources. For instance, in 'The Maths Channel', Kelly Holmes asks questions and provides explanations on decimals and answers; in 'Olympiad'. Here, as the source of the audio material is a part of her presentation, this is a voice-over (Appendix I, shots 152-162).

In narration, the source of sound is entirely different from the presenter(s) and the speakers are never seen on the screen. In fact the voice of the narrator(s) and the style used to present the programme's text re-characterise the segment. For example the descriptions of 'Deadly Divisions' on 'The Maths Channel (Appendix I, shots 72-88), is provided by a voice like in the style of David Attenborough. This imitation can make the segment more interesting for pupils and gain their attention better.

In 'Maths for Grade 5' segments such as 'Multiply by 1000', 'Decimals II', and 'Decimals III' (Appendix II, shots 69,144, and 145-153) are also presented by narration. The voice of the narrator, accompanied by the pace of the segment delivers the context of the programme very clearly. The choice of the narrator and the quality of the voice and presentation in 'Maths for Grade 5' is very successful.

7.6.2.4 Music

'The Maths Channel' uses music mainly for gaining attention. A recognisable piece of music is played during the introduction to each programme; this is followed by a crash zoom meant to gain pupils' attention. Another distinguishing example appears in 'Olympiad'. When Kelly Holmes encourages pupils to take another quiz and says, 'try this one', the men's 4 by 100-metre relay starts with a blast of music, which, along with the runners, is a great method for attracting attention (Appendix I, shot 183). Finally, in 'Street Maths', the piece of music used for the opening sequence is recycled in some interludes during the programme (Appendix I, shots 188-193). The music, which has a

magical theme, is relevant to the subject of this segment. According to Jaspers (1991: 49-50),

> ...it is clear that music is important in instructional audio-visual material. As every sound does, it attracts attention and direct perception. Used as an opening sequence it collects and focuses the awareness of the audience. And it sets a shared mood.

Although overall, music in 'Maths for Grade 5' runs at a slow-pace, which has no effect on attention or learning (Wetzel et al, 1994: 143), there are some segments (e.g., leading titles during the programme and 'Decimals III') which contain good pieces of music. For instance, the title music has a recognisable melody and rhythm with an opening, middle and ending, which is a good auditory signpost to promote pupils' recall at home (Appendix II, shot 85, and shot 145).

7.6.2.5 Background music

Nearly half of 'The Maths Channel' uses background music. Background music adds impression in 'Deadly Divisions', 'Weather Report', most parts of 'Check It Out', and during the introduction of the programme (see Appendix I). Fons Jaspers identifies the importance of background music:

> Its affective emotional elements are rhythm, tempo, volume, and orchestration, and not so much melody or formal structure. This kind of music creates and colours an environment that is presented to be noticed by the images and events of the film (1991: 48).

Narration and background music in 'Maths for Grade 5' create good combinations; however, in some sequences like animation, the monotony of the music makes its structure inferior (Appendix II, shot 144).

7.6.2.6 Sound effects

Sound effects enhance the animated material and music in 'Deadly Divisions'. In 'Olympiad', they recreate a live environment for sporting events. More interestingly, in 'Weather Report', sound effects are employed to supplement visual humour. When Jeremy's disembodied head moves along the number line, the corresponding sound effects increase its emotional impact (Appendix I, shot 239).

According to Table 7-4 there is only 3% of the time of 'Maths for Grade 5' dedicated to sound effects, while there are various segments, which could have been more effective with such audio material. For instance there is no concern for sound effects in 'Large Numbers' (Appendix II, shots 3-15), and very little in 'Mental Calculations' (Appendix II, shots 70-84).

7.6.3 Visual Sources

Following Collins (1983: 126), 'Television programs consist of sequences of visual and auditory stimuli that are organized in particular ways'. Accordingly in this part of study the visual sources and their educational function in both sample programmes such as camera techniques, graphic, animation, and other visual effects, were examined. Table 7-5 shows the overall differences of visual sources between 'The Maths Channel' and 'Maths for Grade 5'.

Visual Sources	The Maths Channel	Maths for Grade 5
Camera Techniques (Number of movements)	68	7
Graphic (Number of captions)	45	4
Animation (Number of scenes)	22	7
Visual effects (Number of effects)	70	30

Table 7-5
Visual Sources of sample programmes

7.6.3.1 Camera Techniques

As mentioned in Chapter 3, all types camera techniques such as physical movements (panning, tilting, craning, and so on), and optical movements (like zooming) have the potential to create excitement, suspension, and prediction, which will attract the viewers' attention. According to Table 7-5 in 'The Maths Channel' there are 68 camera movements, which means the average of one move in every 25 second. As seen in Appendix I, 'The Maths Channel' employed various camera techniques such as crash zoom (shots 3/9), tracking (shots 45-46), or zoom in and swish pan (shot 96) to gain attention, or in shot 88 there is crane up camera movement, or a swish pan in shot 196 for presenting the stimulus material.

Too many static pictures in a television programme is not able to attract pupils. In 'Maths for Grade 5' the camera movements are extremely limited—there is only about one move every three minutes. According to Appendix II, seven camera movements within a twenty-minute programme cannot provide an attractive peace of Schools Television programmes.

7.6.3.2 Graphic

There is a substantial difference between these two programmes in the usage of graphic materials. 'The Maths Channel' used 45 graphics to illustrate abstract materials: a giant chequebook, different positions for number place value in 'Check It Out', and for effectively communicating information in quizzes in 'Olympiad' and 'Weather Report'. Most of these graphics were combined with animation materials, such as, for instance, zooming in and out on number lines (Appendix I, shot 154). On the contrary, there is serious deficiency of graphics in 'Maths for Grade 5'. Only four graphics are used for the entire programme, this seems inadequate for educational purposes.

7.6.3.3 Animation

Animation is vitally important in 'The Maths Channel'; in fact, 37% of the programme's duration dedicated to animation in 204 seconds. Abstract functions, which are impossible to illustrate are conveyed through animation. Zooming in and out on number lines in 'Olympiad', 'Street Maths', and 'Weather Report'; guidance for subtraction in 'Kenneth Confronts'; and illustrations of number place value in 'Check It Out' are all examples of how animation can be used effectively and relevantly in relation to educational objectives. In addition, 'Deadly Division' provides a full animation segment in order to illustrate the abstract process of dividing numbers by 10 and 100.

In contrast, only 4% of 'Maths for Grade 5', in seven of its scenes, is dedicated to animation, while it could be replaced by other media easily. Movement and flashing

numbers in 'Multiply by 1000' and 'Decimal II' cannot be considered valuable animation material.

7.6.3.4 Visual effects

'The Maths Channel' used 70 visual effects, including a combination of images throughout the programme, changes in pace of delivery, moving background graphics, chromakey in 'Olympiad', and the disembodied head of Jeremy in 'Weather Report'. These provided relevant links between powerful visual materials and educational concepts. My observations show that, even the studio set of 'The Maths Channel' was created by visual effects. Each presenter's performance was recorded separately in a very small studio[22] and was later edited by computer graphics to produce shots of two co-presenters working together on a massive set.

'Maths for Grade 5' used 30 initial visual electronic effects such as fade in and out, superimposition, and vertical wipes yellow screens. Except a few superimpositions in 'Decimals III', these effects were mainly used as transitions/separators and had no substantial relation to the educational objectives.

7.6.3.5 Presenter

There are two different types of presenters in the sample programmes. In 'The Maths Channel' all presenters are professional actors/actresses, while in 'Maths for Grade 5' the programme is represented mainly by a professional primary teacher and his pupils. As mentioned in Chapter 3, each of this presenting processes has advantages and

[22] Stage V, the old sound stage in Ealing Studios, London.

disadvantages. The professional teacher in 'Maths for Grade 5' knows how to deliver the educational contents and there is no considerable obstacle for such a task, but as a television presenter he encounters different problems. For instance, although he maintains good communication with pupils in the studio (as he is doing his own job), such communication with viewers is very weak. In addition to his poor appearance as a television presenter (as a typical maths teacher he is not televisually appealing), he also has poor vocal capabilities. These become strong barriers to proper television communication. Undesirable televisual materials (i.e., the presenter) fail to deliver the educational content, and also fail to attract viewers over other mainstream channels, which are broadcasting in parallel with 'Maths for Grade 5'. From my observations of process of the production of 'The Maths Channel', it can be deduced that firstly all presenters deliver carefully prepared scripts on different occasions and secondly as the ultimate goal of the schools programme in Britain is to not 'teach' but rather to 'enrich' conventional teaching, the process of the production with non-teacher presenters did not face any problems.

7.6.4 Editing and Pace

In addition to audio and visual sources, editing and pace play a crucial role in the structure of a programme. As mentioned in Chapter 3 of this study a programme can be judged as being boring or exciting, which is partly based on practices of editing and pace. Table 7-6 shows the position of editing in 'The Maths Channel' and 'Maths for

Grade 5' in relation with the overall duration of the programmes and the number of shots.

Editing and Pace	The Maths Channel	Maths for Grade 5
Total time	27': 50"	20': 37"
Total shots	243	153
Number of seconds per shot [Approx]	7	8
Number of shots per minute [Approx]	8.7	7.3

Table 7-6
Editing and pace of sample programmes

Although table 7-6 shows that the pace of both programmes seems similar (number of seconds per shot and number of shots per minute), the density of contexts varies widely. As mentioned earlier in this chapter, 'The Maths Channel' is saturated by appealing material such as humour, different clips in different locations, music, sound and visual effects and so on, while in contrast, in 'Maths for Grade 5' the contents of the programme were distributed in less variety in context. For instance, in the introduction to 'Mental Calculations', a single and static caption entitled simply 'First Story' appears for a very long time of 8 seconds. Consequently, the rhythm of 'Maths for Grade 5' appears very slow and unappealing, which is contrary to the needs of the target audience. Schleicher et al (1980, quoted in Bryant, 1983: 225) in an investigation that used high school seniors, they found that,

> [...] the fast pacing of humorous stimuli in educational programs attracted more students for longer periods of time to the screen than did the interspersion of the same stimuli at a slower pace.

However, according to Figure 7-6, it has to be admitted that the frequency of shots is almost the same for the two programmes. For the viewer, the apparent difference in pace is subjective, due to the comparative richness of 'The Maths Channel' shots rather than to their greater frequency. It is not the number of shots per minute that makes 'The Maths Channel' seem faster, but the greater density of information in each shot, and the fact that there greater shot movement created more information.

7.6.5 Production Platform

In addition to studios and locations, which are two well-known platforms for television productions, there are other sources like Archive footages and Supportive Visual Materials that assist television production. All audiovisual clips that are sourced from pre-existing programmes are called Archive Materials.[23] The other production bases, which are provided by computer graphic/animation, vision mixer effects and chromakey are named exclusively for this study as Supportive Visual Materials. Such specific definitions will assist the process of analysis in order to recognise the level of variation in the production stages of the sample programmes.

Production Platforms	The Maths Channel	Maths for Grade 5
Studio	35%	75%
Location	28%	21%
Archive Materials	21%	0%
Supportive Visual Materials	16%	4%
TOTAL	100%	100%

Table 7-7
Production Platforms of sample programmes

[23] Also called 'Library material' by Combes and Tiffin (1978: 61).

7.6.5.1 Studio

Studios in 'The Maths Channel' link different segments of the programme together and introduce upcoming segments. They also always contain humorous elements, which can attract pupils' attention. Moreover, in 'Kenneth Confronts' and 'Olympiad', the studio is used to mediate educational contexts and audiovisual materials.

'Maths for Grade 5' is primarily presented in the studio and on the model of an ordinary classroom. This is contrary to pupils' sense of imagination and innate curiosity, and to their expectations of a television programme. Pupils like to be amused by television, to see something beyond their daily study environment as Fisch (2004: 31) states,

> Numerous studies have shown that preschool (and school-age) children prefer television programs that feature visual action over lengthy "talking heads" scenes (i.e., static scenes focusing on dialogue spoken among characters or directly to the camera).

According to Table 7-7, 75% of 'Maths for Grade 5' is produced in the studio, and also based on dialogues between the teacher and other students. Hence such a production structure might not be appealing enough to motivate pupils at home to watch the programme.

7.6.5.2 Location

Locations naturally present the real world and can be effectively linked to educational contexts, where pupils can share and compare their own experiences with the programme's content. The location of both programmes provides links between

mathematics and the real world. 'Kenneth Confronts', 'Olympiad', and 'Street Maths' in 'The Maths Channel', and 'Large numbers', 'Decimals III',

One of the most successful segments in 'Maths for Grade 5' is 'Mental Calculation', which employed narrative structure and is produced on location (Appendix II shots: 70-84). The successful connections between the maths as subject matter and the real world (taxi fare) strongly owe to the implementation of location. However such achievements in 'Maths for Grade 5', due to shortages of both budget and time in the programme's production in addition to the capabilities of production team, is very little (Ziaee, 2000).[24]

7.6.5.3 Archive Materials

In addition to original productions either in television studios or on location, using various other audiovisual sources pertinent to the subject matter will enrich the production values. For Schools Television the use of archive materials to clarify or help explain a reference in the programme to the outside world can extend pupils' audiovisual experiences as Adams (1990: 158) notes 'short excerpts can be selected to reinforce a concept or illustrate an example (e.g., 2000 Sydney Olympiad in 'The Maths Channel'). According to appendix I, 'The Maths Channel' was overwhelmed by 109 varied archive materials, which represents in 21% of the duration of the programme (Table 7-7). Due to total time of the programme 27': 50" (Table 7-6), this means that there is an archive source in the programme nearly every 15 seconds. That provides a colourful structure,

[24] Reza Ziaee Doostan, director of 'Maths for Grade 5', interviewed by author, 18 February 2000, Tehran-Iran.

which is capable of attracting attention and delivering appealing materials to pupils. These materials proved influential on the programme in several ways, for example they helped inform the learner of objectives and helped to gain attention in 'Check It Out' (Appendix I, shots 10-15 and 18-29). In another example, 'Olympiad', many archive materials of the 2000 Sydney Olympiad are used, as well as graphics and animation accompanied by lively music and sound effects. Such rich television production structure, encourages the learners to follow the contents of the programme and helps the programmes put across stimulating material (Appendix I, shot 151). In contrast, 'Maths for Grade 5' totally neglected such context delivery, which may crucially decrease its visual and stimulation appeal.

7.6.5.4 Supportive Visual Materials

Visual materials, which are mainly based on computer animation/graphic or electronic visual mixers, create the other platforms to support television programme productions. According to Table 7-7, 16% of the production platform of 'The Maths Channel' is provided by supporting visual materials. For example in 'Olympiad', in addition to archive materials, there are various computer animations and graphics, which create other stages in television production (Appendix I, shots 130-145). Such materials in 'Maths for Grade 5' amount to about 4%. As it is shown in Appendix II there are computer animations such as 'Multiply by 1000' or vision mixer effects and graphics in the segment on large numbers (shots 1-2).

It has to be mentioned that the structure of such materials in 'Maths for Grade 5' is very simple and is not as sophisticated as the structure of equivalent materials in 'The Maths Channel'. Hence, from the point of view of production value, simple electronic wipes or slow-paced moving numbers, as animated materials cannot provide good supportive visual materials for 'Maths for Grade 5'. While the quality of supporting visual materials in 'The Maths Channel' is very similar to mainstream television channels, which can both attract pupils to watch the programme, and also covey the educational contexts. Hence, when the production materials cannot attract pupils to watch the programme, all valuable informative messages fail to reach the target audience.

7.7 Summary and conclusion

The main aim of this chapter was to present a detailed analysis of two schools programmes, one from the United Kingdom and another from Iran, and conduct a comparative analysis of their educational objectives in relation to television production values. Gagné's 'events of instruction' for planning a course proved to be a reliable tool for assessing the programmes' educational objectives. Therefore every segment of each sample programme was evaluated using shot-by-shot detailed analysis.

In the second part of the chapter, the production values of each programme were analysed. Comparative charts supported the study with statistical data. This part of the study revealed the fundamental obstacles in producing effective quality Schools

Television in Iran. In summary, the key devices for enabling reception and retention were simply missing.

The detailed analysis and comparison study on sample programmes also illustrated that there are crucial gaps between school programme making in the UK and Iran. It revealed that Schools Television in the UK implements both theories of learning and televisual features more coherently and more effectively than in Iran.

It was found that 'The Maths Channel' is capable to meet Gagné's instructional events in most areas, however, such success cannot be evidenced that programme makers in the UK selected such theory of learning to formulate the structure of production. As mentioned in Chapter 3 several theories of learning are supporting the schools programmes.

On the other hand the detailed analysis of 'Maths for Grade 5' (as a sample of Schools Television in Iran) revealed that the structure of Schools Television merely imitates traditional teaching styles, which are mainly based on a teacher lecturing conventionally. Therefore the function of television production is reduced to recording these conventional educational events with very little televisual added value. However the analysis of Schools Television in Iran is not limited on a sample programme but further investigation of the obstacles that create this discrepancy will be considered in following chapter. In addition, the results presented in this chapter will form the foundation for creating new production criteria models in forthcoming discussions.

Chapter 8

COMPARITIVE STUDY OF PRODUCTION MODELS AND CRITERIA

8.1 Introduction

The previous chapters reviewed the respective historical developments of schools television in the UK and Iran, outlining the key differences in values and experience between the two countries. Programme case studies were taken and compared, and their educational effectiveness evaluated in relation to the adopted presentational strategies. This chapter brings together the different findings to assist in defining the obstacles that exist within the Iranian Education Network for effective programming and to offer suggestions. It is important that the detailed information concerning the production values of the UK experience are seen, where feasible, to be applicable to the Iranian. When key organisational and production criteria are applied to the Iranian schools television, whilst acknowledging the historical and current socio-political situation, then a substantial evaluation is possible.

Before we enter a discussion of the comparative study of the production criteria, it is necessary to review the obstacles to Iranian media culture, and television production. By recognising and understanding the basic conditions of production, we will be better able to know what might be used from the analysis of the UK experience.

8.2 Obstacles to Iranian media culture: a brief revision

Iran, as one the world's most ancient countries,[1] has a very long history of literacy, including inscription in several areas such as petrography, writing on vessels, literature, and even academic materials.[2] Mohsenian Rad (1990: 479) remarks that 'there is some evidence that writing in some form has been practiced in Iran for over 3000 years', also Homayoonfarokh (1966, quoted in Mohsenian Rad 1990: 488) notes 'a library in Rayy[3] in 936 A.D. held 117,000 chirographic books', or following Pasargard,

> public education and literacy are old features of Iranian society, illustrated by the numerous ancient libraries currently being discovered in the country. Before A.D. 1219, for instance, there were 114 libraries in Iran, of which 56 were purely court library system, one of which consisted of over 162,400 volumes (Pasargard, 1970, quoted in Malek and Mohsenian Rad, 1994:75).

In fact, as Mowlana (2006) emphasises, the Islamic and medieval periods were golden eras in Iranian history and education. He adds that 'in my judgment, Islam played a leading role in the expansion of education, science, and arts',[4] but unfortunately Iran has suffered from various invasions from time to time. Following Ayman (1974:1), 'Iran overcame more than 35 major attacks, and has survived from foreign savage invasions by Greeks, Mongols (or Moguls), and Arabs'. As a result, the magnificent heritage such as the library in Raay and most other libraries in Iran

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[1] The history of Iran dates back more than 4000 years.

[2] For instance, the Academy of Gundishapur was founded in 666 A.D. during the Sassanid dynasty. The Gundishapur complex consisted of a university, a library and the world's earliest teaching hospital. Available online at http://en.wikipedia.org/wiki/Academy_of_Gundishapur, accessed 7 January 2005.

[3] This refers to the ancient Iranian capital of Rayy, which was destroyed by the Mongols in 1220 A.D. Traces of Rayy, where the conqueror Macedonian Alexander halted while pursuing Darius III, king of Persia in 330 B.C., are still to be found south of Tehran.

[4] Professor Hamid Mowlana, Director of the Division of International Communication at American University, (author's personal correspondence via email received 22 March 2006).

were destroyed by Genghis Khan and the Arabs. This was the beginning of a discouraging era for Iranians, as Mashayekhi (2006) notes,

> when Europeans were underway with the industrial and scientific movement, Iran was still involved with a series of connected civil and foreign wars. Such condition (i.e., the Moguls attack) also created barriers against the transmission of flourished and productive periods to the next generations.[5]

Mowlana (2006) also emphasises that

> the devastating attack of the Mogul followed by the decline of educational and cultural as well as scientific fields in Iran was no doubt a major element in the prevention of literacy.[6]

Hence, gradually old traditions of oral culture became predominant aspects of communication in Iran, and literary materials in Iranian society gradually diminished. More specifically, with the invention of print it fell behind European countries, and the gap between them increased rapidly and dramatically. As Mowlana (1994: 22) remarks,

> as the Islamic world fell short in adopting the new means of technologies, due to the political, economic, and social factors internally and externally, it was also left behind for hundreds of years in creating an infrastructure that would sustain the early acceleration in information and knowledge in the industrial era. Thus, a quantitative as well as a qualitative gap was developed between the West and those of the Islamic countries.

In fact, the print industry shaped a vital revolution for literature and knowledge dissemination and played an extensive role in shaping human mass communication. Gutenberg created a new era, which can be recognised as the pioneer of other mass communication possibilities from that time forward as Mowlana (1994: 21-22) notes,

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[5] Mehrdad Mashayekhi, Iran-Emrooz, http://www.iran-emrooz.net/index.php?/politic/more/7563/, (23 March 2006).

[6] Ibid 4.

> the invention of the Gutenberg press in the middle of the 15th century saw the birth of the "print culture" and a tremendous quantitative jump in the output of human information leading eventually to the so called "electronic communication," and the "information explosion" centuries later.

Hence, while most European countries were establishing print as an important distribution media of human knowledge, Iranians were largely unaware of and uniformed about the rest of the world's improvements. Subsequently, they entered into this advanced era unprepared and with considerable delay. In fact, such an important turning point came in Iran only a few centuries later. For instance, Mohsenian Rad (1999: 498) compares the first publication of newspapers in Europe and Iran:

> ...[publication of newspaper] happened in Iran...seven generations after Europe....when the first Iranian newspaper '*Kaghaz_e Akhbar*' was published in 1873, it was 215 years since the first newspaper in London had been published.

In addition to this huge gap between Iran and Europe in access to newspapers, and to this remarkable delay, some evidence shows that Iranians did not even have appropriate experiences in the print period either, as Mohsenian Rad (1999: 499) points out:

> In forty lines of news in the first Iranian newspaper (the size of half a normal page of contemporary newspapers) 14 deferent labels for the king were published: *the Majesty the shadow of God...the Majesty the world's kiblah...the Majesty the aegis of Allah....* The price of '*Vaghaye_e Etefaghye*' (the third Iranian newspaper) was about 40 times more expensive than '*La press*' newspaper and equal to the cost of 7.5 kilos of bread. At the time, about 99% of the 11-million population of Iran was illiterate; whether others were able to buy regularly such a newspaper at that price is in doubt.

This background naturally influenced Iranians' perception and implementation of other emerging communication apparatuses such as radio and television. Table 8-1

shows the historical availability and duration of print and electronic media in European countries and Iran.

Table 8-1 Appearance of different media in European[7] countries and Iran

	European Countries	Iran	Time Difference (Year)
First Printed Book	1436 A.D.	1817 A.D.	381
First Newspaper	1622 A.D.	1837 A.D.	215
Duration of print period [before electronic]	**484 Years**	**123 Years**	**361**
First Radio Station	1920 A.D.	1940 A.D.	20
First Television Station	1936 A.D.	1958 A.D.	22
Duration of electronic period	**88 Years[8]**	**68 Years[9]**	**20**

Source: Mohsenian Rad, M. *Ertebatshenasi* [Communicology]. Tehran: Soroush Press, 1999: 505.

Mohsenian Rad (1999: 506) stated his view on the causes of these differences is as follows:

> I believe this difference leads to certain social characteristics in human communication in [Iran]. One of my hypotheses—without concern for literacy variables—is that due to factors like the inaccurate [experience] in the Gutenberg galaxy, Iranians proportionally pay less attention to written materials such as newspapers, magazines, books, and even administrative reports or letter writing.

According to Table 8-1, when radio arrived in European countries they had been using printed books and newspapers for 484 years. This means that westerners gradually understood and absorbed the function of literature and illustrated communication culture; therefore, they were more prepared for adapting and

[7] In the original source this is 'Western'.
[8] The dates have been updated to 2008. The original date in the source is 70, which is based on the year 1990.
[9] The dates have been updated to 2008. The original date in the source is 50, which is based on the year 1990.

implementing forthcoming generations of media. For instance, European learned how to communicate and share ideas with others nonverbally.

In contrast, when Iranians entered the electronic era, they were at least 361 years less experienced in print communication than westerners, and due to a long deficit of proper education and tremendous rates of illiteracy, they had fewer opportunities for developing a proper understanding and practicing of such media. For instance, most residents from urban and rural areas, who had no experience even with printed materials, travelled overnight from an old tradition of oral communication into a modern period of electronic media. Thus, they suddenly became a major part of radio and later television audiences without adequate cultural preparation.

8.2.1 Predominance of oral culture

Initially, the strong traditional culture of oral communication in Iran was rooted in public places such as teahouses, bazaars and mosques, which were the main sources of entertainment, information, news and even some important political movements.[10] Among the different sources of communication, mosques had more influence than the others. One reason is that Islamic clergy have had long-term relations with both mosques and bazaars. The mosque, which is a Muslim place of worship and other Islamic ceremonies, is traditionally a vital platform for religious preachers to deliver sermons to people. These sermons are delivered through a one-way path, in which a mullah or other rank of Islamic clergy (as the source of

[10] Even in the modern communication era, due to the influence of the Muslim faith, bazaars and mosques in Iran have played a very strong role in some important political movements such as '*Ghiam_e Panzdah_e Khordaad*' (protest against capitulation legislation in 1963) and the Islamic revolution in 1978-79.

knowledge) presents concepts to listeners (followers). While these kinds of speeches seem similar to other forms of didactic lecturing, due to the power of religious concepts and the authority of the clergy the audience is satisfied to simply be there whether they understand the concepts or not, as they believe that listening to such sermons is a correct religious action. As Mohsenian Rad (2004) adds,

> in such communication audiences are less selective and more passive. Now imagine such a condition continues for a thousand years and its principles became entirely constitutional, and such people with such long-term traditional experience control modern communication apparatuses like radio and television.

This type of authority and strong tradition, which is readily accepted by the followers, has to some extent been translated into the modern era of electronic communication and became the predominant criteria for the structure of radio and television production in Iran.

Table 8-1 shows that in contrast with print media, Iranians established radio and television about 20 years after Europeans. However, there is evidence that they could not initially overcome the weaknesses of Iran's inadequate media culture. Two generations of radio and television in pre- and post revolutionary Iran have both to an extent been involved primarily with either technical supply or ideological directions rather than production quality. Under the Pahlavi regime, Iranians were overwhelmed and influenced by huge amounts of western television programmes, which were imported by NIRT in the 1960s and 1970s. Contrary to NIRT in post-revolutionary Iran, IRIB's policies were all more oriented towards Islamicising the media and becoming independent from western production imports and their influences rather than making quality programmes. Moreover, and in technical terms,

in pre- and post-revolutionary Iran both regimes equipped NIRT and/or IRIB with the most updated technologies, equivalent to or even more sophisticated than in developed countries. However, due to an inadequate knowledge of making high quality programmes, both failed to reach western standards of production and programming.

8.3 Obstacles to Iranian Television Productions

In the early years of the national television network in Iran, due to a lack of experience in production and leading policies of westernisation under the Pahlavi dynasty, NIRT imported huge numbers of films and television programmes. These were mainly from the United States and meant little for audiences who had a different, traditional culture and, as mentioned above, who lacked sufficient media literacy. Mowlana (1997: 205) emphasises the issue:

> Indeed, one of the major problems facing Iranian television prior to the Islamic Revolution was precisely its isolation from the mainstream Iranian culture and tradition and its excessive reliance on royal patronage, secularism, and its dependence on foreign and imported programmes.

In fact, under the Shah and during the Pahlavi dynasty, some members of Islamic clergy who led the Islamic revolution in the late 1970s prohibited people from watching television or listening to the radio. From a moral point of view, some of them believed that the concepts of radio and television programmes were against Islamic values and beliefs, and some insisted on political views when such materials were distributing westernisation and specifically American culture. As Malek and Mohsenian Rad (1994: 94) point out,

> [...] from the very beginning, modern communication was an open system with its roots firmly planted abroad. It began with technological imitation of foreign sources and continued with duplication or direct importation of foreign software to fill the existing hardware. Such a trend continued in increasing fashion through the 1960s and 1970s, resulting in frequent cultural clashes.

Since 1979, in post-revolutionary Iran, radio and television have been employed as important tools, mainly for propaganda and the distribution of Islamic culture. IRIB tried to refurbish the structure of radio and television to make it closer to moral and Islamic religious subjects. More importantly, it tried to be independent from western countries in both political and cultural influence. Hence, it stopped broadcasting western films and television serials and banned commercials as a sign of westernisation and capitalism that encouraged audiences to spend more.[11] Subsequently, due to the shortage of programmes they shut down the second television network (*Barnameh_ye Dovom*) and broadcast programmes daily from 19:00 to 22:00 on the only remaining television network with a limited budget from the IRI government. Mohsenian Rad and Abbaszadeh (1990: 61) note that

> ... in the early days of the revolution Sadegh Ghotbzadeh, the first President of IRIB in post-revolutionary Iran, claimed that 'radio and television has to guide people toward moral issues, educate and entertain them, and for such purposes 2.5 to 3 hours of daily television programming would be sufficient.

Under such circumstances, IRIB's two main policies were first to recruit a new generation of revolutionaries for key positions in order to establish Islamic values,[12] and second to produce more programmes nationally and reduce imported television programmes. They believed that this strategy of limitation could strengthen the

[11] However, later in the 1990s IRIB revised its policy and commercials returned to radio and television in Iran.
[12] Large numbers of radio and television employees were also expelled as part of a 'refining' process, as it was assumed they were loyal to Pahlavi's regime.

revolution against the influence of western culture and inspire producers to make more programmes about domestic issues, which were compatible with Islam and revolutionary values.

However, overall the strategy did not create significant and permanent production values. Even in the early years of the Islamic revolution, the quality of television programmes declined dramatically due to new policies and a shortage of productions with Islamic codes, television became more audial.[13] For instance, IRIB started to produce many speeches and lectures, mainly on Islamic topics, which delivered content directly to the viewers. Although the diversity of the television productions gradually improved, for several reasons monotonous programme styles such as the 'talking head' remained prominent on the screen.

In the post-war period of the 1980s (following the Iran-Iraq War, 1980-88), which was also a period of international progress in satellite technologies, IRIB changed its orientation from war and national defence toward entertainment. Comedies aimed to change the post-war atmosphere of depression and more importantly keep viewers away from satellites. As Mowlana (1997: 207) points out:

> one of the major criticisms directed toward television in Iran deals with the lack of entertainment programmes to occupy leisure time. The argument is made that Iranian television should create more attractive and popular cultural activities for leisure time; otherwise, the audiences will turn to foreign satellite television programmes or seek alternative means of entertainment elsewhere. [...] The expansion of new television channels and the increased amount of coverage given to sports, movies, and animated features are among the strategies to overcome these problems.

[13] Policy makers and production teams in the early years of the Islamic revolution were inexperienced in producing television programmes, which would be compatible with Islamic values and beliefs. While IRIB had access to large amounts of material left in the NIRT's archives, IRIB's Islamic philosophy required it to replace the entire corpus.

Due to new management policies and legislation such as the allowance of broadcasting commercials[14] and establishment of television tax (see IRI Constitution, 1995: 764)[15], IRIB's budget boomed from £14,150,000 in 1989 to £765,250,000 in 2004 (Central Bank of Iran, 2004:34).[16] Hence, in addition to local provincial channels, IRIB expanded its network to seven television channels.

Moreover, under Article 175, Note 7 of the IRI Constitution, only IRIB has the right to establish radio and television signal transmitters (in any part of Iran) and to broadcast programmes. In addition, the prohibition of satellites has enabled huge central authority and IRIB's monopoly as the 'voice and profile of the Islamic Republic of Iran', which is in fact, how the organisation's name is translated directly from Farsi.[17] Therefore, the main roles of radio and television in Iran are seen not merely to inform, entertain and educate, but also must be associated with Islamic moral and political issues in the way that central government recognises as appropriate and useful for the society. As Article 175 of the IRI Constitution emphasises,

> the freedom of expression and dissemination of thoughts in the Radio and Television of the Islamic Republic of Iran must be guaranteed to be in keeping with Islamic criteria and the best interests of the country.[18]

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[14] IRIB used to be commercial free-to-air television since 1979; however, in the late 1980s commercials made a strong comeback to the screen before, after and within programmes, and subtitled commercial messages are even superimposed on the programmes.

[15] Under Article 1, Note 59 of Iran's 1995 budget law, IRIB has permission to charge consumers for 500 rials monthly on all electricity meters (except those used for agricultural purposes, in villages, and low (under 150 KW/h) electricity users). The television tax for each house occupant is around 3% of the cost of electricity usage and is automatically added to the bimonthly electricity bill. For the average electricity user, the annual television tax has an equal value of £3.

[16] 1,530,500,000,000 rials (Iranian currency), which is based on 2,000 rials per pound sterling in 2006 (see footnote 32), or £90,029,412 exchange value.

[17] *Seda va Sima_ye Jomhouri_e Eslami_e Iran.*

[18] http://www.salamiran.org/IranInfo/State/Constitution/, (08 February 2003).

Accordingly, programme makers became merely deliverers of moral and political messages in all genres of television production. Under this powerful monopoly and in the context of television productions, the necessity of more creative and high-quality programmes is emphasised and issued in regulations; however, in practice, due to a culture of authority and lack of competition, it is largely neglected. Competitions for better programmes even inside IRIB and between programme makers are neither permanent nor based on clear policies.

To some extent, the Islamic revolution restructured the old tradition of communication, so while most western television programmes disappeared from the Iranian television screen, talking-head productions such as *Ba Ghoraan dar Sahneh*[19] or *Dars_hai az Ghoraan*[20] became very successful in the early years of IRIB productions, even without concern about any powerful functions of television. Programme makers simply employed the medium like mosques, which had vastly broader audiences.

However, it has to be noted that the inauguration of new television channels, which offered viewers more choices, reduced the early success of lecturing productions; 'talking-head' styles are still heavily employed at IRIB. As mentioned earlier, one reason is that according to Islamic rules and certain political concerns, IRIB reduced the number of imported televisual materials and provided programmes more independently. In fact, with the new revolutionary policies, very limited imported materials (mostly documentaries) and an oral aptitude rooted in long-

[19] 'Koran in Practice' (1979-80) was a soliloquy by Ayatollah Mahmood Taleghani about the relation between the contents of the Koran and daily life. It attracted different viewers, especially young revolutionaries.

[20] 'Studies on Koran' is a monotony lecturing, in which the presenter various examples, stories and even humour to deliver Islamic issues. It attracted different levels of audiences in its long-term run since 1981.

existing Iranian tradition and culture, the 'talking-head' style became more common and automatically occupied a large proportion of IRIB's productions. Although IRIB overcame the obstacles of programme shortages with this policy, unfortunately the genre of production robustly decreased the quality and standards of programmes, as Rashtian (1999: 8) emphasises:

> The most important priority of broadcasting in Iran is 'distribution', and filling the slots and the 'qualities' of production come next. Having loads of car components such as engines, tyres, chassis and so on does not necessary mean that we have a car industry. The important sign of a car industry is a 'car', which is ready to use on the road.

In fact, television production at IRIB mainly imitated common Iranian oral communication culture and failed to add any audiovisual values to its commonplace programmes. As a result, the established 'talking-head' production style influenced all television genres at IRIB, including fiction and drama. The lack of diverse locations, long-take shots with a static camera, and very slow paces of audiovisual materials without any dramatising rationale are some examples of the characteristics of contemporary television programmes in Iran. Subsequently, there are several programmes on IRIB television networks, which are more suitable for radio than television; as a result, there is evidence that more than 50% of programmes failed to attract viewers (Rashtian 1999: 47).

More explicit educational issues in both formal and informal programmes at IRIB are the areas of television production most strongly affected by the 'talking-head' style. Various informal educational/formative programmes on IRIB channels and formal educational programmes on IRIBEN are primarily produced monotonically (e.g., an expert talking to the camera). This illustrates how, in addition

to those facts I mentioned earlier, the structure of direct delivery of educational concepts has been influenced by the Iranian educational system and its roots in a fundamental form of authoritarianism. The *Maktab*[21] was a basic form of mass education in Iran (and some other Muslim countries) where a teacher (usually a scribe or member of the clergy) trained students under a fierce and powerful dictatorial authority, where students identified simply as obedient followers.

Such a culture is leading Iranian schools, where traditional methods and teacher-based approaches are still widely used. Good students are defined as those who sit quietly in the classroom and listen to teachers' lectures. While there are a few attempts to establish open classes in some private sectors, for the majority of primary and secondary students (averaging 40 students in each classroom), two-way paths of communication between teachers and students seems far from realistic. As Abdollahi (2005) explains:

> in most Iranian schools, teachers are the only people who talk and there are no discussions with students, so the educational system is more or less like old '*maktabs*'. The concepts of the textbooks are definite and unchangeable and delivered by teachers' lecturing, and learning for students is not more than memorizing loads of information.[22]

The production of educational issues on Iranian television is accordingly influenced by this educational system, so IRIB imitated the authority model of teachers in the classroom and became merely a mediator of teaching materials to

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[21] Muslim elementary school; also called *kuttab*, meaning 'school' in Arabic. Until the twentieth century, boys were instructed in Koran recitation, reading, writing, and grammar in maktabs, which were the only means of mass education. Source: Encyclopaedia Britannica 15th Edition (2002), Volume7 Page720.

[22] Abdollahi, Shirzad, Expert in Iranian Education, Interview with the BBC. http://www.bbc.co.uk/persian/interactivity/guest/story/2005/01/050115_radioyourvoice-education.shtml, (16 January 2005).

viewers. All aspects of televisual capabilities, which can be harnessed for better education are normally neglected.

8.4 Models of Schools television in the United Kingdom and Iran

Following is a comparative review of four institutions in Britain and Iran (Channel 4 Learning, BBC Education, IRIB Education Network, and the Educational Technology Centre), which are all involved in schools television. This review will facilitate a study of the feasibility of using the British model of schools television to create compatible criteria in Iran, in order to enhance the capabilities of schools television production. To achieve this goal I have created four comparative tables for a) administration and finance, b) production, c) distribution, and d) feedback. This will clarify the discussion of the components of schools television in the United Kingdom and Iran with details and analysis, and will enable each unit of discussion to be employed as a signpost for the entire production criteria in other cases.

8.4.1 Administration and finance (Table 8-A)

The value and importance of schools television in any nation can be examined through the policies of its management and financial support. Accordingly, details of the organisational structure, sources of funding and the overall budget of school programmes in the United Kingdom and Iran will allow me to establish a foundation for compatible criteria.

8.4.1.1 Organisational structure

There are two different organisational structures for schools television in Britain: a) publicly funded ones like the BBC, and b) independent organisations like ITV, Channel 4 and Channel 5. However, whether publicly or commercially funded,

Table 8-A The Structure of School Television in the United Kingdom and Iran (Administration and Finance)

		United Kingdom		Iran	
		Channel 4 Learning	**BBC Schools**	**IRIB Education Network (IRIBEN)**	**Educational Technology Centre (ETC)**
ADMINISTRATION AND FINANCE	Organisation structure	Independent and not-for-profit broadcaster	Independent/State public corporation	State	State
	Training	No training	In-service training, BBC Training & Development	IRIB College and in-service training	No training
	Recruitment	No recruitment [as programme maker]	Graduated students from normally high rank universities	Mainly graduated students from IRIB College	Graduated students in relevant fields and freelances
	Sources of funding	Self-funded by advertising revenues	Public funds	IRI Government Public funds Commercials	IRI Government
	Annual Budget for School programme	£10m	£6m	Approx. £500,000	Approx. £1 million on school television and other educational aids
	Budget for per hour programme	Approx. between £120,000 and £180,000/hour	Approx. £110,000/hour	Approx. £2400/hour	Average between £10,000 and £30,000/hour

all broadcasting networks run independently, with no budget from the British government;[23] all are required to meet certain regulations and have various social obligations as per their charters[24] or licences.[25] For instance, the Channel 4 licence requires that it broadcast school programmes at least 330 hours annually, and that these must be supported by a full range of appropriate material such as teacher guidance and pupil notes.

The structure of the BBC broadcasting organisation is established under successive Royal Charter and publicly funded through licence fees. Although the BBC is regulated by a board of governors with twelve members that are appointed by the queen on the recommendation of government ministers, an agreement under the Charter recognises the BBC's editorial independence. This combined structure of governmental authorities and independence is unique in the world.

In Iran, on the other hand, radio and television are entirely under the control of the Supreme Leader and the overall policies of the IRI government; the right of broadcasting is legally monopolised to IRIB:

> The establishment of broadcasting of radio and television signals throughout the entire territory of Iran is exclusive to IRIB and any attempt by virtual or actual individuals to broadcast radio and television materials will be prevented and prosecuted (IRI Constitution 1983: 533).

Under the objectives and policies of the IRI Ministry of Education in the complex of the Organisation of Research and Planning, the Educational Technology Centre (ETC) provides a variety of audiovisual and multimedia services for

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[23] Except the BBC World Service, which is funded by the Secretary of State for Foreign and Commonwealth; and SC4, which is funded with government and advertising revenues.

[24] The British government reviews the BBC Charter every ten years.

[25] Ofcom is in charge of the regulation processes for independent television broadcasters in Britain and reviews their licences every 10 years.

education in Iran, so that the entire goals of ETC are tied to educational policies in Iran and to the IRI government. ETC is in charge of policy making, directing, observing, designing, and producing educational audiovisual materials and educational computer software. Although it is well equipped with reliable audiovisual facilities under the IRI Constitution, it is not allowed to broadcast its programmes and thus its productions are distributed to schools on videocassettes and CD-ROMs.

After the inauguration of IRIBEN, ETC found a permanent position at IRIB and access to broadcasting platforms for their programmes. More specifically, IRIBEN's school programmes are heavily dependent on ETC productions.

8.4.1.2 Training and recruitment

Current IRIB recruitment is mainly provided by its own faculty[26] and occasionally from other institutions and individuals. The main problem here is that IRIB offer lifelong jobs to most of the IRIB Faculty students, due to the expenses of training and different processes of Islamic assessments,[27] which as mentioned earlier are very sensitive at IRIB, Hence there is neither competition among students in applying for future jobs (which has led to a decline in the quality of their studying), nor serious attempts by IRIB staff for better results. Hence, good television programmes on IRIB channels were made but mainly accidental appear as unpredicted phenomena from self-motivated programme makers, individuals with

[26] The IRIB Faculty, as a part of governmental higher education in Iran, offer around 150 places annually to students who pass the Iranian national university entrance examinations. These universities are funded by the Iranian government and free for students, even there is a monthly sum for each student for his/her educational expenses.

[27] In addition to normal assessment towards a B.A./M.A. degree, students of the IRIB Faculty have to pass special Islamic assessments called 'selection' [*Gozinesh*] in order to get permission to work at IRIB.

short-contracts, or those who joined the IRIB from other institutions (e.g., Art University) who often have had difficulties obtaining jobs in broadcasting organisations and who therefore have strong ambitions to show their capabilities.

For in-service training there are numbers of courses available for IRIB staff, but lack of competition and motivation compel employers to see these courses as just an obligatory step toward routine promotion. According to the result of a questionnaire for IRIB staff,[28] 67% of respondents agreed that in-service trainings are normally run inappropriately and have no effect on the quality of IRIB productions (Figure 8-1).

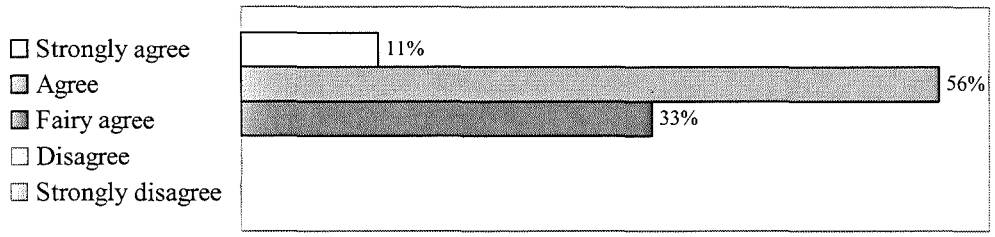

Figure 8-1

In place of this, we might consider a model following the BBC, which runs permanent in-service training and provides several short courses in Training & Development for all people in the UK and around the world. The IRIB would be able to avoid having its own faculty and replace it with a professional broadcasting training centre which offered standard training courses to all enthusiasts, regardless of whether those in attendance meet the Islamic codes or not. IRIB would be free to employ talented people under its own terms and conditions. From this perspective,

[28] I designed a multiple-choice questionnaire containing 47 questions in two sections regarding obstacles to IRIB in general to educational programme making in particular. Overall, 25 questionnaires distributed to different staff at IRIB (e.g., producers, directors and lecturers at the IRIB Faculty). I received a total of 18 responses on 28 July 2002.

like all television channels in Britain, only highly capable talents would be able to join the television industries.

In fact, IRIB, with its enormous technical facilities – like the BBC – is quite capable of establishing technical services. With around four decades of experience in broadcasting training it would be able to offer several courses in different areas of radio and television to 'all' enthusiasts. Such a policy with the help of well-known international institutes and trainers in the long-term will create well-trained programme makers both for IRIB and independent companies and create a competitive and professional environment for productions. Subsequently, more innovative proposals in several genres of television production (including school programmes) would be available for IRIB.

8.4.1.3 Sources of funding

The BBC is a publicly funded broadcasting service, and the budget for the organisation is mainly based on licence fees;[29] however, there have long been periodic disputes about the BBC's monopoly of public funds, especially when licence fee payers have more choice in the market through multi-channels in the digital television era. There is growing pressure on the BBC to abolish licence fees, especially by independent channels, whose budgets are mainly based on commercials. But the BBC defends the policy as an essential criterion for its independence in order to protect the media from the influence of government, shareholders, and advertisers' pressures, and to protect its British identity. As Thompson (2004) remarks, the '[licence fee] can make sure that the digital future is

[29] Licence fee income in 2003/4 was around £2.8 billion. http://www.culture.gov.uk/global/press_notices/archive_2005/dcms033_05.htm?properties=%2C%2C%2C&print=true, (23 April 2005).

still full of great British content;' or in Stevenson's (2001b) view, '[the BBC] have the freedom to make investment decisions that are based on public need rather than financial return'. Subsequently, a review of the BBC's Royal Charter in 2005 confirmed the licence fees for the BBC for more 10 years:

> despite its weaknesses, there continues to be, as yet, no viable alternative to the licence fee. People recognise this and by and large support its retention, especially when they are asked to consider the other options. We have therefore decided that the licence fee should continue (DCMS, 2005:3).[30]

As a public corporation and an independent and not-for-profit broadcaster, Channel 4 is totally self-funded by advertising revenues. In remarkable contrast, IRIB is exclusively funded by the IRI government, advertising revenue, and even fees for TV tax. This funding structure, and various sources of revenues which in fact combines the structures of the BBC and independent television channels in the UK, created one of the largest organisations in Iran. Finally, ETC's budget is part of the IRI Ministry of Education, which is provided by the IRI government.

8.4.1.4 Budget for school programming

According to Table 8-A, one of the major differences between schools television in Iran and the United Kingdom is the amount of their budgets. However, the following explanation of comparable value is necessary for a reliable assessment.

In the exchange market, one pound sterling in Britain is equal to 17,000 rials (approx) in Iran[31], which means if Iranians want to match the BBC's school budget, they would have to increase IRIBEN's budget for per-hour programme to

[30] Department for Culture, Media and Sport Review of the BBC's Royal Charter A strong BBC, independent of government, March 2005.
[31] Currency equivalents for 2007.

R1,780,000,000, and to attain an equal budget to Channel 4 Learning, it should be increased to R3,400,000,000—both figures being totally unrealistic. With this amount of money in Iran, producers can make two or three feature films. For this study, I therefore calculated the currencies not based on their exchange values but on their purchase power in their original regions.[32] From this perspective, the configuration of IRIBEN's budget for per-hour programming would be valued at the equivalent of £2,400, and for ETC would be between £10,000 and £30,000.[33]

Even with this adaptation, the gap between the budgets of schools television in Iran and Britain is still extremely high. For instance, the budget of Channel 4 Learning for per-hour schools television is more than 60 times larger than IRIB's and about 15 times larger than the ETC.[34]

As a model of budgeting for schools television in Britain, however, it has to be mentioned that obviously IRIB does not have the venues for exporting programmes worldwide like the BBC or Channel 4. In addition to high quality production and long-term credibility, as John Richmond (2001) mentions, "broadcasters in Britain are lucky that English is a world language and most programmes travel very well".[35] But having said that, according to Table 8-A, IRIB also benefits considerably from commercials in addition to governmental funding and television tax. In that respect, re-establishing a new budgeting system for educational programmes is possible for IRIB. For instance, the amount income drawn from commercials, apart from other

[32] For instance, in year 2007, the basic monthly wage in Britain is about £1,000 and in Iran can be estimated around R2,000,000. From such a viewpoint, the value of one pound sterling in Britain is equal to R2000 in Iran.

[33] A budget like £30,000 for per hour schools programme merely spends on some specific projects like animations.

[34] This figure for the BBC Education is 46 times larger than IRIBEN and about 10 times larger than ETC.

[35] John Richmond, Commissioning Editor, Channel 4 learning [1993-2003], interviewed by the author, 07 March 2001, London-UK.

sources, in 2002 was more than 94 times larger than the annual budget of IRIBEN in 2005.[36]

In addition, there are other sources potentially available for IRBEN, primarily as ETC cannot broadcast its own programmes and is giving its entire productions to IRIBEN for free. Hence, the budget of the ETC from the IRI Government for schools television production can be added to the budget of IRIBEN. Secondly, there are also other organisations or independent companies, which are interested in supporting cultural and educational television programmes.[37] Reasonably, IRIB can support IRIBEN strongly with a reliable budget from all compound revenues, which are available for neither the BBC nor Channel 4.

In fact, in order to have appropriate schools television services, IRIB needs to re-establish its policy and management on budgeting schools television. Such policy will firstly attract professional production teams within IRIB who are normally not working on low budget programmes to schools television. Secondly, it will encourage independent educational producers to compete with IRIB producers as a way of commissioning more valuable programmes. However, it has to be mentioned that merely having an adequate budget cannot guarantee the production of quality schools programmes. There are several other factors, which have to be considered consciously and simultaneously.

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[36] Based on comparison and adaptation of IRIB annual report (2002: 4) and statement of Arman Noie, Head of IRIBEN Planning (author's personal correspondence via email received 3 April 2005).

[37] At the moment there are several companies in Iran, which financially support some cultural television programmes as part of their creditability activities, which can be directed towards educational programmes.

8.4.2 Production (Table 8-B)

Production is the main body of any kind of radio and television programme. Because school programmes have to take educational content into consideration, the process of production as compared with other genres of television programmes is more complicated. The primary idea of a school programme, relevant to its educational objectives, enters into a commissioning process, while a production team have to consult about the ideas with educational experts, namely, educational officers or curriculum advisors who mediate between programme makers and schools. The commissioning editor, head of production and programme makers of schools television channels have to be sure that incoming programmes meet the needs of professional educationalists, head teachers and teachers. Subsequently, all school productions have to pursue accurate guidelines in order to achieve reliable results. Finally, after such preparation, producers begin programme production and primarily follow mainstream production factors. However, striking a balance between educational content and audiovisual materials is a unique challenge to school programme makers.

8.4.2.1 Production objective

Until September 2003, the production objectives of Channel 4 Learning were very similar to those of BBC Education. However, due to a new curriculum for the 14–19 age group, Channel 4 changed its focus strategy on production objectives for educational programmes. Heather Rabbatts,[38] former managing director of Channel 4

[38] Heather Rabbatts, Managing Director of Channel 4 Education (2002 – 2006).

Table 8-B The Structure of School Television in the United Kingdom and Iran (Production)

		United Kingdom		Iran	
		Channel 4 Learning	**BBC Schools**	**IRIB Education Network (IRIBEN)**	**Educational Technology Centre (ETC)**
PRODUCTION	Production objective	Provision of selections of topics which via television are capable of assisting teachers and pupils in the classroom	Provision of selections of topics which via television are capable of assisting teachers and pupils in the classroom	Provision of the entire teaching textbook as a course to assist pupils at home or those who have no access to qualified teachers	Provision of the entire teaching textbook as a course for teachers and pupils in the classrooms
	Commissioning	Programmes are commissioned with independent production companies only (there are no in-house productions)	In addition to in-house productions, some 25% of programmes are commissioned with independent production companies.	Mixture of in-house and ETC productions	In addition to in-house productions, some 50% programmes are commissioned with independent production companies
	Consultations with educational experts	Independent companies employ freelance educational officers and educational experts on projects if needed	Freelance curriculum advisors/ educational experts, or short-term contracts	Short-term contract with educational technologists	Has 6 educational technologists on staff. Also consults with freelance education experts in some cases.
	Meeting with educational professionals	Regular meetings with key Government agencies	Two informal annual meetings with Primary and Secondary Committees in order to revise the productions and educational needs. Focus groups conducted by audience and consumer research department at frequent intervals	Monthly meeting with ETC	About four annual meetings with teachers, and educational experts Focus groups conducted by teachers at frequent intervals
	Guidelines for production	Matching programmes to the UK's National Curriculum for 14 to 19-year-olds	Matching programmes to the UK's national curriculum and to QCA schemes of work	Matching programmes to the Iranian Teachers' guidance for training	Matching programmes to the Iranian Teachers' guidance for training
	Overall structure of programmes	Wide range of drama, animation, documentary, entertainment and factual programmes	Normally edutainment, with a mixture of narrative, fiction and non-fiction, and the emphasis on education	In-house productions are mainly based on direct teaching and the 'talking head'	General attempts to produce indirect teaching materials, and some narratives
	Annual broadcasting	Compliance minimum of 330 h/a	Average 700 h/a	Average 1800 h/a	None
	Annual production	Average 66 h/a	Average 60 h/a	Average 200 h/a [approx. 50% of them are provided by ETC]	Approx 100 h/a (agreed to provide 300 h/a for IRIBEN)

Education[39] points out that 'the move was in response to government curriculum changes for this group, and focused on an audience already loyal to Channel 4' (quoted in Sommerich, 2003). New programmes try to deal with life skills and tackle issues around transition, identity and knowledge in an entertaining way that both emotionally engages and inspires the audience.[40] Hence, from September 2003, 70% of Channel 4's educational budget is devoted to 14–19-year-old audiences.

BBC Education as Nott (2002) emphasises try to provide selections of topics, which are capable of helping teachers and pupils in the classroom gain access to very good educational television, in which programmes with high production values can be used to achieve clear educational objectives.[41]

BBC Education also design television programmes, primarily in topic areas, which can assist teachers in meeting the objectives of the national curriculum. The BBC's commitment to education is the provision of learning support for schools, encouragement of lifelong learning, and exploitation of new learning possibilities. These are facilitated by interactivity, and the BBC's main production objective is to supply curriculum-based content and support to children, parents and teachers via radio, television and the Internet. However, BBC Education's outputs are much wider than the provision of formal learning materials (BBC Annual Report 2003-04).[42]

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[39] Since April 2005, Channel 4 Learning renamed Channel 4 Education.
[40] Channel 4 Commissioning (Education).
http://www.Channel 4.com/corporate/4producers/commissioning/4 Learning_2.html, (22 April 2005).
[41] Sue Nott, Former Head of Children Educational Production BBC Education, interviewed by the author, 09 May 2002, London-UK.
[42] BBC Annual Report and Accounts 2003-2004, p.46

The production objective of IRIBEN for schools programmes mainly depends on ETC as the core provider of the programmes. In fact, IRIBEN has no editorial input in the educational contents and qualities of ETC's programmes other than technical advice for broadcasting procedures. However, IRIBEN itself make some programmes in the field and also offer proposals for joint productions with ETC (Noie, 2005).[43] In either case, the aim of IRIBEN is to assist pupils at home or those who have no access to qualified teachers. ETC, although it is very similar, aimed to provide classroom assistance to teachers and pupils with taped audiovisual materials. The production objective of both IRIBEN and ETC is to provide entire range of teaching textbooks as courses.

In contrast, Channel 4 Learning and BBC Education only concentrate on those curriculum areas that television can best assist. Naturally, for any media, there are certain areas that are unable to cover and these have to be abandoned or produced in collaboration with others. Such production policies from IRIBEN and/or ETC reveal that schools television in Iran is more enthusiastic about the quantity, rather than the quality, of programmes as Nott (2002) emphasises that,

> some things work on television and some things don't. What you can do and what sometimes happens is that educationalists who want to use television, they are trying to create a textbook on screen and that is not going to be grabbing anyone. You have to have an awareness of what works on television.[44]

Producing all teaching textbooks with an inadequate budget and in a short period of time put pressure on IRIBEN and ETC in using the simplest television production process to achieve a large production objective. Merely putting a camera in front of

[43] Arman Nouie, Head of Planning of IRIBEN. Responses to questionnaire, 3 April 2005, Tehran-Iran.
[44] Ibid 40.

an experienced teacher to teach as if in a classroom cannot provide good television materials. For instance, according to Table 8-B, the average time of new programmes at IRIBEN and ETC are around 200 hours annually, three times more than Channel 4 Learning or BBC Education. Such a huge quantity of production, funded with less than that 0.02 of the budget of schools television in Britain, cannot rationally provide valuable television material and may fail to achieve the production objectives.

8.4.2.2 Commissioning

As mentioned in Chapter 5, Channel 4 Learning has no in-house production and commissions all of its programmes through independent television production companies. While BBC Education is able to commission all its school programmes, it commissions about 25% of its programmes to independent companies in order to create competition and enhance the quality of production.

The commissioning process and role of the commissioning editors are crucial to the success of radio and television programmes. From my observations at BBC Education and Channel 4 Learning, commissioning editors in both institutions have a variety of background experience in educational fields, which assist them to be widely aware of what their audience wants.

For instance, in 2001 I observed a production meeting at Channel 4 Learning. The main members of the production team (producer, director, and educational consultant) showed rough cuts of three episodes of a science programme called 'Life and Living Processes'[45] to Commissioning Editor John Richmond (1993-2003) in order to get his response and comments. I found the commissioning editor a

[45] 'Habitat and Population', 'Green Plants', and 'Diet and Nutrition'

polymath and very open-minded television educationalist, who, although he had never produced a programme in his life, could practise lateral thinking and strong decision-making. Later I also learned that he had formerly been a teacher in north London, which enabled him to be clearly aware of learning needs as well as of the programmes' varied target audiences. In fact, while the meeting was a two-way interaction in which the production team and commissioning editor shared ideas, his influence in directing the discussion and decisions was strong and apparent.

Later in my research I met and consulted with Karen Johnson, former Executive Editor for Children's Education at the BBC, who also has a background in teaching media and programme making. In both cases, I found that commissioning editors with the help of their rich experiences in education and television production are in command of all production processes as Ward (2000) emphasises 'this is the key in a way to the success of schools television'.[46]

In Iran, as school programmes are basically provided by ETC, the commissioning process is based on a mixture of selection and co-ordination with ETC for new programmes. As mentioned earlier, since its inauguration in 2002, IRIBEN created broad and ambitious educational objectives in several areas without having appropriate preparations for such a huge goal. Hence, instead of a well-planned commissioning process for production as illustrated by BBC Education and Channel 4 Learning (which plan approximately 12 to 18 months in advance), IRIBEN started to produce and collect programmes from various institutions even before it had an appropriate building for the channel. Among these outsiders, ETC

[46] Malcolm Ward, Educational Officer, Channel 4 Learning (1993-2003), interviewed by the author 17 October 2000, London-UK.

was a great choice as it had been making programmes for schools since 1988.[47] But even with this source of programmes, which could cover most areas of IRIBEN schools television, the important task of developing an appropriate commissioning process and the quality of programmes were generally neglected as a result of enormous needs. Subsequently, IRIBEN's policy on school programmes was limited to scheduling and broadcasting rather than planning or commissioning. Hence, they became mainly dependent on ETC's, whether old or new productions and without regard to the quality of the programmes, and did not go through a proper 'commissioning' process at IRIB.

ETC has its own commissioning processes, so that in addition to in-house productions, some 50% of programmes are commissioned to independent television production companies. The commitment of ETC under the policies of the IRI Ministry of Education is to commission television programmes, which are directly relevant to schools' formal textbooks. As Talebinezhad (2003) remarks, the 'ETC's ambition is to make video textbooks, which are aimed primarily to deliver for the 'Roshd Plan'.[48]

After the inauguration of IRIBEN, ETC maintained the same policy and as the main provider of school programmes for IRIBEN established an interactive commissioning process between itself and ETC. As a result, school programmes are commissioned by ETC, which sends suggestions to IRIBEN regarding broadcasting assessment and budget estimations; however, ETC and Educational Planning and

[47] It has to be mentioned that ETC basically has about 40 years of history of educational television production, but since 1988, due to new production facilities, programmes were gradually produced more seriously, more permanently and with better technical quality.

[48] Ahmad Talebinezhad, Executive Manager of the projects of IRIBEN at ETC, interviewed by Mehdi Hamzeh, 12 April 2004, Tehran-Iran.

Research Organization of IRI Ministry of Education—not IRIBEN—provide the budget.[49]

Pupils and teachers watch the ETC's school programmes under the 'Roshd Plan' in the classrooms, while the same programmes are broadcast on IRIBEN for unsupervised viewers at home. Talebinezhad (2003) justifies this and notes that the 'IRIBEN and ETC can complete each other under such a policy'. But while the ETC with 'Roshd Plan' is merely able to cover a maximum of 19,266 schools, the main responsibility for the rest of the nearly 100,000 schools with 18,670,000 pupils[50] therefore naturally shifts to IRIBEN. Hence, it seems that the policy of commissioning and distributing is impractical.

IRIBEN has to take the leading role as it is a major radio and television organisation, which has broadcasting power with an enormous number of viewers in anywhere of 1,648,000 square kilometres of Iran. Merely revising others' commissioned programmes when it has no appropriate control over or monitoring of policies regarding the production processes may cause both televisual and educational materials to fail. Using the model of BBC Education and/or Channel 4 Learning, IRIBEN can commission ETC or independent television production companies with more credible authority to create high-quality productions. To do this, IRIBEN has to be open so that all high-potential talents both inside and outside the organisation can join and establish an authoritative commissioning editorial system. IRIBEN has to employ several educational advisors and consultants from all available institutions (e.g., IRI Ministry of Education, Teacher Training University),

[49] However, in the event that IRIBEN orders an idea for school television production through ETC, it will provide the budget.

[50] Source: Iran Census of Population and Residence 1996.

individual bodies, and freelancers for both short and long-term contracts. This could be a feasible goal for IRIBEN to start with, but it should be managed carefully and with consideration of long-term practices.

8.4.2.3 Consultations with educational experts

One of the important advantages of schools television in Britain is that most programme makers at BBC Education and independent companies that work with Channel 4 Learning used to be teachers, head teachers, or have worked in associated areas. This background is pivotal for the achievement of successful outputs at all stages of designing, planning and writing proposals for an educational programme, and throughout the entire process of production. In addition to this advantage, there is also an army of freelance consultants and education officers/curriculum advisors who advise programme makers where there are gaps in the resources. Thus, commissioners can largely base their commissioning plans on data provided in this way, as Nott (2002) points out:

> We work very closely with education consultants, that is obviously essential, because we are television people; we are not in the class everyday, we are not dealing with the education everyday, so you know we are not as in touch with that area as people who are educators. So it is vital that we work with these consultants.[51]

Such advisors, which have a broad range of professional experience in education, assist commissioners, producers, and directors in making comprehensible links between educational needs and programmes in relation to the national curriculum. However, having reliable educational consultants will not itself create

[51] Ibid 40.

'good school programmes', as this has to be accompanied by a strong knowledge of television production as well.

In contrast, at IRIBEN almost none of the producers, directors or decision makers have had any experience in educational fields; consultants are also limited to one freelance educational technologist (Fooladi and Jahed, 2004).[52] Hence, this combination of a television production body with no experience in educational areas, and which use one educational technologist with little or no television production knowledge as the sole source for learning context, leads to ineffective consultations and subsequently low quality programmes.

As ETC is basically the audiovisual arm of the IRI Ministry of Education, there are naturally more educational technologists available for in-house programme makers. However, the result of questionnaires designed for this study reveals that these consultants are not efficient. 78% of open-ended responses were very negative about such collaboration, including: lack of accurate job descriptions, inaccurate, and desultory knowledge of technologists about television productions and vice versa, as well as lack of trust between programme makers and technologists, which subsequently interferes with the production processes.[53]

Schools television in Iran, as mentioned earlier, has to expand its consultation sources, apply independent bodies outside the institutions and gather different views to achieve comprehensive comments to establish adequate and reliable educational television programmes. Moreover, and as a long-term policy, both IRIBEN and ETC

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[52] Asadollah Fooladi and Mohsen Jahed, Producers at IRIBEN, interviewed by Mehdi Hamzeh, 15 June 2004, Tehran-Iran.

[53] I designed a multiple choice and open-ended questionnaire containing 30 questions for 20 members of the Educational Technology Centre (ETC) and received 12 responses (including from the Director General and programme makers) in 16 May 2001.

can employ the BBC's model and train educators as programme makers in order to make stronger links between the worlds of education and television.

8.4.2.4 Meeting between schools television and educational professionals

Collaborating with teachers and understanding their needs are important tasks for broadcasters at all stages, from planning a programme to making, delivering and getting feedback from schools; otherwise, the programmes will be of little use. To do this, BBC Education and Channel 4 Learning[54] holds two to three annual meetings with primary and secondary school professionals. These meetings help programme makers identify concerns about schools' needs for the future, while educators concerned with broadcasting can became familiar with broadcasters' capabilities and boundaries. They can share their ideas and problems in order to develop valuable educational programmes. Jane Iffla, former chair of the primary committee at the BBC, explains the objectives of these meetings as follows:

> ...the object of this committee and secondary committee I had always assumed [was to] look at the content and the suitability of proposals for the schools, which is to do with what we [teachers and head teachers] do and what our day jobs are... linking in with what your day jobs are at the BBC...just making sure that what you were producing is going to be useful in schools and it was going to picked up and used.[55]

There are also monthly meetings between IRIBEN and ETC, however, these are oriented toward establishing more coordination between the broadcaster (IRIB) and current major school programme makers (ETC). This is a positive sign of better

[54] Until September 2003.
[55] Personal observation at the Educational Broadcasting Council for the United Kingdom, meeting of the Primary Programme Committee, held on 13 June 2002 at BBC Education, White City, London-UK.

understanding, but naturally it is in its early days and very unpredictable. As Talebinezhad (2003) notes,

> ...the relationship between makers and educationalists is not based on principles, but rather on friendship between some managers in both organisations, so this fragile accompaniment may break at any time; for instance, when new management arrives into power at IRIBEN or ETC.[56]

ETC itself also has about four annual meetings with teachers and educational experts to discuss their needs and educational issues. These meetings can facilitate valuable coordination, remedy the lack of principles and provide a clear attitude towards educational means, as well as present more credit for production itself. It has to be mentioned that as schools television has been long interrupted in Iran, some teachers are unhappy with having videos in their classrooms. As Talebinezhad (2003) explains, '...this is because teachers have important benefits from their own private classes and think audiovisual materials could have negative effects on their revenues'. However, Talebinezhad optimistically adds that 'they need more time to get used to the educational videos as an extra help and not a competitor in their formal or against their private classes'.[57]

Although there is a productive relationship between television and education at this stage, it is not an easy task for either school professionals or either IRIBEN or ETC as both suffer from a lack of knowledge, experience, understanding, and more importantly 'translation' of the educational content into televisual materials and vice versa. As a result, IRIBEN and ETC currently rely on facile solutions to achieve teachers' confidence. Such obstacles lead to decisions that affect the quality of the

[56] Ahmad Talebinezhad, Executive Manager of the projects of IRIBEN at ETC, interviewed by Mahdi Hamzeh, 12 April 2004, Tehran-Iran.
[57] Ibid.

entire production. For instance, in order to prevent teachers' criticism, they employ writers of teaching textbooks to present the programmes without considering their capabilities for such a crucial position.

Hence, in addition to meetings with teachers, following models like BBC Education both IRIBEN and ETC need to establish a reliable source such as an independent body of educational professionals with extensive audiovisual experience as a 'critical friend'[58] to advise, support and endorse their outputs.

Comparatively speaking, BBC Education has had extensive experience with such practices. Cain and Wright (1994: 107) explains his experiences when he was Secretary of the Educational Broadcasting Council[59] from 1988 to 1991,

> I have found it fascinating to observe how it [the Council] has evolved from the rather straight-laced and formal body it once was to the more lively debating and decision-influencing forum it now is. The Constitution of the Council, incidentally, is formulated of Governors, which had taken an increasingly positive interest in it and its work.

It has to be noted that the council has existed since the early days of school broadcasting in Britain (in the mid 1920s) and that such coordination and understanding developed after more than eight decades of tiresome challenges and practice. Obviously, this result would not happen for IRIBEN or ETC overnight as it requires long-term vigilance and constant consideration. Moreover, with the inadequate media backgrounds mentioned earlier in this chapter, the attempt would be extremely difficult.

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[58] Cain and Wright (1994:106).

[59] The BBC's Board of Governors established the Educational Council for the United Kingdom in 1987. It was formed by merging two much older bodies, the School Broadcasting Council for the United Kingdom and the Continuing Educational Advisory Council. Cain and Wright (1994: 107)

For reliable educational results, schools television in Iran needs to start from the very beginning and establish an Iranian version of the Educational Broadcasting Council. Such a mediating body could comprise of experts in education and associated fields and individuals who are able to make informed comments about IRIBEN's production and plans and keep it in touch with other educational activities effectively. It could also provide a functional forum to give programme makers feedback and ideas about IRIBEN's learning outputs. They could in turn monitor the performance of IRIB's educational programmes as they relate to the needs of the national curriculum in Iran and report annually to the Broadcasting Council on IRIBEN's success in delivering this material. In brief, a model such as the BBC's Educational Broadcasting Council in Iran would be a reliable source of assistance to IRIBEN for 'a) giving independent, practical, strategic advice across the spectrum of IRIBEN, b) advising on educational priorities, c) offering a balanced perspective on, and overview of, the educational output, and d) supporting and protecting IRIBEN strategies, both inside and outside the organisation' (adapted from Cain and Wright, 1994: 106).

8.4.2.5 Guidelines for production

Both Channel 4 Learning and BBC Education have to match programmes to both the UK national curriculum and The Qualifications and Curriculum Authority (QCA) schemes of work. The QCA meets with BBC and Channel 4 staff on a regular basis to discuss ideas for future programmes and to keep them up-to-date about particular initiatives. When developing programmes, BBC and Channel 4 often consult the QCA for advice on accuracy or interpretation. Hence, both schools

television providers in Britain use QCA work schemes and the national curriculum as guidelines for their productions. To do this, as mentioned earlier, they employ various consultants from different institutions.

IRIBEN and ETC try to match their programmes to the Iranian Teachers' guidance for training as the main guidelines for their productions. However, due to lack of experience and a shortage of consultants (particularly when educational technologists, who are the only consultants and have inaccurate knowledge of media, insist on too much education as they are in teacher' guidance in the programme) the output seems only to roughly imitate the content of the textbooks. While there are some attempts by ETC to better interpret educational contents into televisual materials, programmes are still mainly delivered directly though a 'talking-head' television style.

It is essential to mention that while teachers' guidelines more or less provide a reliable educational source, they are not an ultimate solution for creating 'good schools television'. Programme makers encounter plenty of difficult areas in education, for which the guidelines themselves are of little help. For instance, abstract subjects like maths need massive, time-consuming thinking to create audiovisual materials for a 'good schools television'. As Nott (2002) explains from her experience with BBC Education producers,

> I think sometimes our producers have to be very challenging about anything; spelling, maths are all quite difficult, didactic, the more didactic the education, the more difficult things are to convey televisually, and I think a lot of the skills of producers I work with...they do have the skill, they can actually take something quite

> unpromising like spelling and turn it into a very creative programme that is also useful.[60]

Programme makers have to employ audiovisual material, which follows the guidelines and heeds advice from consultants towards the national curriculum; they also need a huge amount of creativity in order to provide reliable programmes for teachers' and pupils' needs.

8.4.2.6 Overall structure of programmes

The detailed analysis of the structure of sample programmes from BBC Education and IRIBEN in Chapter 7 of this study revealed differences in the overall structure of schools television in the UK and Iran. In Britain it is largely based on indirect educational materials that combine entertainment and education, while in Iran the delivery of educational contents is more direct, mainly in the 'talking-head' production style.[61]

Both Channel 4 Learning and BBC Education normally make edutainment programmes with a mixture of narrative, fiction and non-fiction. There is an emphasis on education, namely through the CBBC Channel, which has delivered a daily four-hour educational series of programmes on digital channel since 2002. The overall structure of school programming in Britain can be described as follows:

> The CBBC Channel's philosophy is 'learning through fun'. This means introducing an element of learning and life skills development across a large part of its output, including drama and factual [programmes].[62]

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[60] Ibid 40.
[61] See Chapter 7, p. 259 (Figures 7-5 and 7-6) and p. 260 (Table 7-3).
[62] BBC Annual Report and Accounts 2003/2004, p.3.

In fact, the production structure of schools television in Britain can be compared to coating unpleasant medicine with sugar. Children normally resist taking pure medicine, so sweetness transforms it into something savoury and assists the treatment process. Similarly, as education on its own is not attractive to most pupils, educational aids (e.g., schools television) can reshape the contents into enjoyable material, as Bate (1984: 189) points out 'television in particular depends very much on material being 'wrapped' and presented attractively and interestingly'. He also mentions 'the aim is to jolt the audience but without the audience being aware of how the effect was achieved (1984: 184). The entire objective of schools television production in Britain is to find an appropriate balance between educational contents and televisual materials with attractive coatings. This became standard for the successful structure of the educational programmes. As Nott (2002) notes,

> the standards for the BBC Education programmes are the same as the other genres of programmes and mainly they will be evaluated on whether it hooks pupils. Is it entertaining? Does it keep pupils' attention? Does it inspire pupils' imagination? The main concern is on the way the programmes have structured, scripted, shot, directed and associated criteria for production values. And for educational purposes television has to apply a different set of standards and roles, which are about whether it is effective educationally.[63]

In Iran, the structure of programmes is mainly based on the imitation of classroom style, as in many of IRIBEN's programmes in which an expert talks directly to a camera. This structure is a result of the lack of programme makers who have experience in translating educational contents into televisual materials, which also can be related to the historical tradition of their oral culture. Even attempts at

[63] Ibid 40.

narrative structure also rely on direct information delivery rather than televisual capabilities. Merely using actors without appropriate interpretation of educational contents into televisual materials, and without having good storylines, cannot attract pupils who are free to select different television channels. For instance, there is a series of maths programmes for year 8—produced at ETC—which shows how a professor in his laboratory helps his young neighbours to overcome their maths problems. Although the idea seems very good, in practice the professor (teacher) and neighbours (pupils) once again deliver the educational contents directly to the audience. The programme lacks a good storyline and all essential criteria of television production for the narrative genre. Hence, there is no dramatic elements in the programme, no suspense, no challenge, and the story is delivered flatly. It is simply the story of a neighbour who has a problem with his/her maths and asks a nearby professor for assistance. At this point, the professor and neighbour try to solve the maths problems with the help of a whiteboard, and the programme simply begins to replicate a formal classroom. Moreover, as the script is based more on didactic rather than dramatic materials and lacks innovative and imaginative directing, the characters are not believable in their roles, and subsequently the programme is not attractive enough to grab pupils' attention. Such naïve structure and diluted dramatisation are neither successful as narrative television, nor do they deliver educational contents appropriately (see Chapter 7). In addition, such programmes on IRIBEN have additional problems when they have to compete with other mainstream television programmes.

If programme makers in Iran had some teaching experience, as do most school producers in Britain, then they would also have experience with children and know what they enjoy, or what hooks them. They could be aware of teachers' needs and understand how teachers might use television in the classroom. But if they have no such experience—as most don't—they have to learn to be conscious of these things, of how the programmes will be used, because this aspect makes it different from other television programme making areas and such knowledge will improve the structure of the productions. They have to learn about their audience, recognise a good idea and be able to turn it into great programming. They will need to work across different media, know how ideas can be packaged for different viewers and be well prepared to convey educational contents into valuable televisual materials.

8.4.2.7 Annual production and broadcasting

According to the Channel 4 licence from Ofcom, in addition to needing to meet the remit, there are specific programme obligations, one of which is a compliance

Table 8-2 Annual Channel 4 School Programming 1996-2003

Channel 4 School Programming	Compliance minimum	Hours/Annum Production	Hours/Annum Broadcasting
1996	330	Approximately 20% of compliance minimum (around 66 hours/annum)	356
1997			457
1998			420
1999			419
2000			399
2001			565
2002			672
2003			695
Average	**330**	**66**	**498**

Source: Channel 4 Television Corporation Report and Financial Statements 1996-2003

minimum of 330 hours of annual school programming.

As shown in Table 8-2, for nearly a decade Channel 4 Learning service was clearly successful and the amount (in hours) of school programming output exceeded this obligation by about 50.8%.

BBC Education, according to Table 8-3, between 1996 and 2005 broadcast an average 498 hours of school programmes, of which about an average 60 hours were new. As mentioned earlier in this study, such productions (either for the BBC or Channel 4 Learning) also have to be recognised as high-quality programmes due to the UK communication acts and Ofcom regulations. During my observations of the production process for 'The Maths Channel' in 2001, I found that the production team spent nine months to produce two hours (6×20 min.) of programme. In other words, they spent more than 1584 working hours (198 working days×8 hours a day)—excluding some weekends for shooting—for 120 minutes of programme. This means that the production team at BBC Education spent an average minimum of 13.02 hours to produce one-minute of 'The Maths Channel'.

Table 8-3 Annual BBC School Programming 1996-2005

BBC School Programming	Genre	Hours/Annum Production	Hours/Annum Broadcasting
1996-1997	Schools (Network)	Average 60 hours	561
1997-1998	Schools (Network)		435
1998-1999	Schools (Network)		432
1999-2000	Schools (Network)		843
2000-2001	Education for children		892
2001-2002	Education for children		678
2002-2003	Education for children		688
2003-2004	Education for children		664
2004-2005	Education for children		640
Average	**Schools and Education for children**	**60**	**648**

Source: BBC Annual Report and Accounts, 1996-2005

Table 8-4 shows the planning of IRIBEN for broadcasting and producing programmes from 2000 until 2004, which, when compared with both BBC and Channel 4 in Britain, are extremely overestimated.

Table 8-4 Planning for Annual IRIBEN School Programming 2000-2004

IRIBEN School Programming	Genre	Hours/Annum Production	Hours/Annum Broadcasting
2000	Fundamental and Basics[64]	--	--
2001	Fundamental and Basics	300	600
2002	Fundamental and Basics	700	1400
2003	Fundamental and Basics	1300	2600
2004	Fundamental and Basics	1200	2400

Source: The Office of Planning of IRIBEN

In reality, however, IRIBEN reached about 200 hours of production and around 1800 hours of broadcasting. However, it is interesting that IRIBEN, which has a budget of about £2400 for per-hour programming, can provide the highest number of annual educational productions. According to Tables 8-2 and Table 8-3 this amount of annual production and broadcasting are three times greater than that for schools television in Britain.

There are two reasons for this quantitative difference. Firstly, the programmes are heavily based on low-cost, studio 'talking-head' shows, which can be made inexpensively and quickly. Secondly, according to Table 8-B, nearly 50% of IRIBEN's schools programmes are provided by ETC.

The annual school production at ETC averages about 100 hours, which mainly supports 19,266 schools under the 'Roshd Plan' (see Chapter 6, Figure 6-1). However, since 2002 and the inauguration of IRIBEN, ETC has agreed to provide

[64] IRIBEN Fundamental and Basic educational programmes cover all subjects in primary and secondary schools.

IRIBEN with 300 hours of school programming annually. Talebinezhad (2003) argues that this commitment is beyond ETC's current capabilities and that it is a major challenge for it to make such a huge number of productions.

Obviously such amount of production or planning does not come from the extraordinary capabilities of IRIBEN and/or ETC, but rather highlights the priority of quantity and the lack of appropriate policies on quality programming.

For instance, while the production team of the Maths Channel spent around 13 hours to produce a one-minute school programme, in Iran a producer at ETC has made an entire course of textbooks for 'Maths' for grades 2, 3, 4, and 5 within six months. This means that the producer, in just 45 days, has made about 120 minutes of programme for each grade; the production team have spent around 3 hours preparing and producing a one-minute segment of the programme. Hence, the average of time spent for the whole process of schools television at BBC Education is at least four times more than that spent at either IRIBEN or ETC.

It also has to be mentioned that merely increasing or decreasing time in the production process does not itself improve the quality of the programme. Rather, the main concern has to be focused on how the production team uses the time for high quality programming. Accordingly, during my observations at BBC Education, I witnessed constant and indefatigable efforts on the part of the producer, director, and production coordinator for televisual innovation, educational accuracy, and outstandingly precise planning for each segment of the whole 'The Maths Channel' programme. The pre-production phase alone entailed various consultations with the commissioning editor, executive producer, and educational experts, all of which was

conducted through enormous and time-consuming paperwork over a period of more than six months. However, I found that this production process at BBC Education is a regular, not exceptional process for any school programme; Len Brown (2002) identifies this as the 'standard for a high quality programme'.[65]

8.4.3 Distribution and support (Table 8-C)

One of the most important issues for institutions involved with schools television is how to deliver educational contents to pupils effectively. From the early days of educational television in the 1950s to now, there have been three generations of delivery systems for school programmes: a) live broadcasting, b) recording programmes on videocassettes, and c) the generation of interactive media like digital television and computer-based platforms or non-broadcasting materials like CD-ROMs and TV-ROMs, which have been employed to support teachers, pupils and their parents. However, schools television in any form of distribution is not produced or intended to be watched like mainstream programmes, and television has to be supported by other materials like print, which are still essential and complement one another.

8.4.3.1 Broadcasting and non-broadcasting materials

In the early days of schools television, the only method of delivery was to broadcast programmes live within school hours; teachers had to synchronise their teaching schedules with the television timetable. This technical obligation created many problems for using schools television in the classroom. For example, faulty

[65] Len Brown, Associate-commissioning Editor Channel 4 Learning, interviewed by the author, 19 August 2002, London-UK.

Table 8-C The Structure of School Television in the United Kingdom and Iran (Distribution and Support)

		United Kingdom		Iran	
		Channel 4 Learning	**BBC Schools**	**IRIB Education Network IRIBEN**	**Educational Technology Centre (ETC)**
DISTRIBUTION AND SUPPORT	Broadcasting	Programmes broadcast for schools to record and watch in the classrooms	Programmes broadcast for schools to record and watch in the classrooms	Programmes broadcast for the audiences at home to watch live	No broadcasting services
	Broadcasting schedules	04:00 – 06:00 09:30 – 12:00 Approx. 14.5 hours/week	02:00 – 06:00 on BBC 2 10:30 – 13:30 on BBC2 09:00– 13:00 on CBBC 'Class TV' Approx. 33 hours/week	13:30 – 15:00 18:15 – 19:30 Approx. 17 hours/week	No broadcasting services
	Non-broadcasting materials	Programmes are available on VHS, CD-ROM, TV-ROM, and DVD for sale	Programmes are available on VHS and DVD for sale	Under construction	Programmes recorded on VHS/CD-ROM and distributed to provincial' centres for free
	Supporting materials	Teachers' guides, activity books, story books and website	Teachers' notes, students' guides, and website	Website	Website

television sets, missing programmes, unsynchronised school timetables and broadcasting schedules, obstacles to revisions, and broadcasting which dominated teaching styles without teachers' demand and control (for instance, teachers could not stop a programme and discuss details under their own teaching plan) detracted from the desire to use television on many occasions.

Recording apparatuses were an important revolution in making and using television educational programmes. In this format, everything was under the control of teachers, pupils, and even parents. Video recorders freed everyone from broadcasting's restrictive timetable and viewers could record and watch the programmes the way they wanted, as many times as they needed. Programmes could be used almost everywhere, effective and convenient revisions subsequently became available, and teachers could control the planning of their classes according to their own needs. In production, programme makers' attitudes were also influenced by technical progress, as they concentrated on smaller segments and the possibilities of pause points for users; they also developed a non-linear production structure, which provided independent and short clips for teachers to use according to their own needs (e.g., Science Zone).[66]

As shown in Table 8-C, Channel 4 Learning provides two different slots for its school services, one from 04:00-06:00 and the second from 09:30-12:00, or approximately 14.5 hours of school programming per week. BBC education also provides about 33 hours of school broadcasting per week on two different channels in a variety of slots: 02:00 to 06:00, 10:30 to 13:30 on BBC2, and 09:00 to 13:00 on

[66] A science programme for KS2 from BBC Education for children.

CBBC (digital service), called 'Class TV'. It has to be mentioned that school programmes on Channel 4 Learning and BBC Education are primarily designed to record from the air and use in the classroom. However, all schools should obtain a licence from the Educational Recording Agency (ERA) before recording any educational programmes from BBC Education or Channel 4 Learning.

Along with other technologies that have been created in the digital era (such as non-broadcasting materials like CD-ROMs, TV-ROMs, and the Internet), new technology like interactive television has broken the last barrier on delivery systems, and reduced the passivity of viewers that television and specifically schools television had always been blamed for. In the future and in a modern digital and non-linear educational environment, viewers can discuss, ask or/and answer questions and communicate with teachers and trainers on television.

In Iran, IRIB Education Network broadcasts school programmes in parallel to mainstream channels, and viewers are expected to watch the programmes at home with no supervision. Such a policy might work for university students who are mature and perhaps motivated enough to watch programmes appropriately, but for very young viewers such as primary school pupils, the policy seems quite unrealistic.

Table 8-C shows the slots of IRIBEN broadcasting. Interestingly, the second slot, which is from 18:15 to 19:30, has to compete with quiz shows and sports on parallel networks. For instance, according to Appendix III, IRIBEN scheduled a maths programme for year 6 at 18:50 on Saturday 01/03/2003, while at the same time IRIB Network 3 was broadcasting live coverage of the English premiership football match. For 11-year-old pupils, such a football match is understandably more

attractive than a school programme like maths. Furthermore, even very keen pupils can be interrupted easily (e.g., by other viewers due to the limited number of television sets at home). Hence, as the school programmes normally are not recorded by schools or users at home, an unreasonable competition between IRIBEN and mainstream television seems inevitable, and this may seriously damage its educational objectives.

As seen in Table 8-5, an online survey for IRIB programmes reveals that 38.8% of viewers selected Network 3 (which mainly broadcasts sports) as their favourite channel to watch; in contrast only 0.98% chose the education network as their first choice. However, education is generally not a favourable topic among mainstream television programmes. While this is quite natural if having fewer viewers, a problem arises when other channels, due to their televisual characteristics, provide attractive materials to viewers. As mentioned earlier, this can easily interfere with the entire objective of a channel like the education network.

Table 8-5 Favourite television network in Iran

From the following television networks, which one do you like the most?									
	Network 1	Network 2	Network 3	Network 4	Network 5	News Network	IRIBEN	Jaam_e Jam	No answer
First Choice	6.77%	2.93%	38.8%	4.88%	35.59%	3.56%	0.98%	2.37%	4.12%
Second Choice	11.24%	13.61%	33.5%	6.21%	17.1%	7.75%	1.4%	2.3%	6.91%
Third Choice	18.28%	0%	9.21%	4.82%	4.75%	8.16%	1.54%	2.72%	20.1%

Source: IRIB Online Programme Survey, http://www.irib.com, (12 Sep 2003).

In such circumstances, with no supervision available for students at home and when programmes obviously cannot be supported by printed materials such as teachers' or students' guides, young schoolchildren may misidentify the Education

Network as a mainstream television channel. Hence, for these pupils, it does not really matter that the programmes are broadcast from a formal education network; they expect excitement and entertainment as much as they do from mainstream television channels. At the very least the programmes have to be extremely 'valuable' or 'informative' to motivate them to watch; otherwise they will change the channel or switch it off. As Fisch (2004: 9) points out,

> in considering children's learning from educational television (particularly in the case of at-home viewing), it is important to remember that much educational television serves as an example of *informal education*, much like educational activities that children find in magazines, museums, or after-school programs....after all, if children do not enjoy the program, they simply will not turn it on.

The other major damage of broadcasting school programmes in parallel with programmes on mainstream channels is that pupils do not take them seriously in terms of the national curriculum. On one hand the lecturing structure of the programmes, which attempt to deliver whole areas of curriculum, makes them unappealing productions. On the other hand, the lack of supervision and the broadcasting policies paint a vague picture of the ultimate objective of IRIBEN services and its association with the national curriculum. As Eagle (2001) notes,

> there is no point in the broadcasters making programmes if they don't serve that curriculum....And there is no point really in coming up with the ideas which aren't going to help teachers teach the things that they have to teach the children.[67]

During about three years of planning for IRIBEN (1999-2002), the main considerations were logistical obstacles rather than effective production structures and policies. In addition, enormous educational ambitions and unrealistic

[67] Robert Eagle at Eagle & Eagle Production Company, interviewed by the author, 4 April 2001, London-UK.

expectations among policy makers, along with a lack of appropriate preparation or any kind of pilot studies, left IRIBEN with broad educational objectives and great programming needs.[68] In such conditions the quantity of productions became a vital priority, while the quality of programmes declined. Biabani, director of IRIBEN, also emphasises this problem:

> ...major parts of the programmes on IRIBEN are like traditional classrooms, there is no employment of new technologies, which students may or may not watch. We have to grab students' attention first, and then convey the message. Attractions of the programme and educational needs have to be considered equally as important (2003: 16).

As mentioned earlier in this chapter, schools television in Iran currently tries to deliver the entire curriculum and both IRIBEN and ETC are doing courses, which are heavily devoted to the formal textbooks from the IRI Ministry of Education. Eagle (2001) finds this style of school programme relatively useless and points out that

> it is thinking mad that the television should do what a book does, or should be lectured. It is good for inspiration and enthusiasm, for bringing children into a subject, which they might be bored with. [Television is] for showing things, not giving a list of things, not giving lots of facts, but demonstration.[69]

As revealed through the sample programme analysis in Chapter 7, 61% of 'Maths for Grade 5' was delivered with a 'talking head', when a teacher (as the host) presents the content of the textbook on television. Such production style is using only a minimum of televisual materials.

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[68] IRIBEN's target objectives can be summarized as: a) Schools (primary, guidance, secondary, and teacher training), b) Higher education (*Payam_e Noor* University, University of Applied Science and Technology), c) Vocational groups, and d) General education (health, DIY, cookery, etc.)

[69] Ibid 66.

8.4.3.2 Supporting materials

Both BBC Education and Channel 4 Learning provide various support materials for schools television. As mentioned in Chapter 5, for the BBC this began just three years after school radio was inaugurated in 1927, when the BBC distributed 233,000 school pamphlets in order to support its programmes. Such service became a tradition in school broadcasting in Britain (e.g., ITV School, Channel 4 Learning); this has continued to the present day, when online websites have been added to the supporting materials. In fact, prints and websites have been woven into school radio and television contexts and strongly link them with educational objectives in order to enrich learning processes. As Cain and Wright (1994: 7) emphasise, focusing on print materials,

> the print materials, which accompany programmes, play a crucial part in the ultimate educational success of the whole operation. The programmes interest, excite and encourage the learner and the accompanying print provides the means whereby systematic and progressive learning gains accrue from this stimulus.

IRIBEN's unsupervised schools television, broadcast parallel with mainstream television, means that neither schools nor pupils at home record the programmes; this has made any use of supporting materials fruitless. However, there is some on-line support available through IRIBEN's website, but due to pupils' limited computer access, it is doubtful that this offers reliable support for the programmes.[70] Even ETC under the 'Roshd Plan', which delivers school programmes on videotape directly to teachers to use in their classrooms, has neglected prints support. However, as both IRIBEN and ETC are doing courses and making school programmes for the whole

[70] See Chapter 1, page 5.

range of textbooks, it is assumed that these also work as supporting materials. This is in contrast to schools television supporting materials in Britain, which do not repeat educational content, but complete the processes of learning.

8.4.4 Feedback (Table 8-D)

Any form of communication will be enhanced with feedback, and for schools television broadcasters feedback can perform a variety of functions. It can help them assess how the contents of the communication are delivered, how well the institutions met their educational objectives, and the educational value of the programmes. Overall, feedback on schools television can be obtained from three different sources: a) responses from schools, b) monitoring and regulations, and c) evaluation.

8.4.4.1 Responses from schools

All dimension of production for schools television, from developing an idea, planning, budgeting, producing, and broadcasting, are mainly based on schools' needs. Hence, attaining feedback from teachers, head teachers, and pupils can reveal to what degree the outputs have reached the educational target, and which changes should be employed for future programmes.

BBC Education has employed educational officers or curriculum advisors to meet with teachers and pupils at schools in order to find out how the programmes are used with classes of children. In fact, the BBC supplies the structural liaison between education and the production departments of schools television and provides feedback on programme use in schools. The BBC also uses other consultants like

Table 8-D The Structure of School Television in the United Kingdom and Iran (Feedback and Assessment)

		United Kingdom		Iran	
		Channel 4 Learning	**BBC Schools**	**IRIB Education Network IRIBEN**	**Educational Technology Centre (ETC)**
FEEDBACK AND ASSESSMENT	Responses from schools	Feedback through online system	Curriculum Advisors (Educational Officers) occasionally have meetings with teachers at schools. Other consultants are practicing teachers; commissioners and production teams make regular school visits	No contacts	No contacts
	Monitoring and Regulations	Office of Communication (Ofcom)	The BBC governors and Ofcom	The Council of Supervision on IRIB	Internal evaluation on a formal basis
	Evaluation	Office of Communication (Ofcom)	Full survey by independent research body (e.g. MORI[1])	The Center for Research Studies & Program Assessment of IRIB[2]	Evaluation of 'Roshd Plan'

[1] MORI provides a full range of quantitative and qualitative research services and holds an important position within the British media, regularly providing senior staff as commentators across a broad range of topics, http://www.mori.com/about/index.shtml, (4 March 2005).

[2] *Markaz_e Tahghighat, Motaleaat, va Sanjesh Barnameh_ie_ye Seda va Sima_ye Jomhouri_e Eslami_e Iran*

practicing teachers, commissioners and production team, who make regular school visits and collect information to schedule future productions.

Channel 4 Learning also used to have several educational officers to get responses from the schools in different areas, very similar to the BBC, but since the curricular changes for pupils aged 14–19 in September 2003, this relationship with schools disintegrate. Now independent production companies can employ freelance educational officers where appropriate.

In Iran, neither IRIBEN nor ETC has any connection with viewers and there are no school visits. They solely rely on educational technologists' existing knowledge, which is not sufficient for school programmes. For instance, educational technologists never liaise between television and educational fields and are entirely dependent on their own experiences and knowledge. This type of policy abandons other valuable sources for consultancy. Thus, as a result, on one hand this lack of contacts and single-source of advice seriously reduces the quality of the programmes. On the other hand, it is very difficult for policy and programme makers to really know whom their audiences are. They have no clear understanding of what changes would be necessary to improve future productions. Hence they just adhere to the educational technologists' ideas—as their only educational source—regardless of whether they are in touch with teachers' or pupils' current needs. Bates (1984: 198) points that,

> The more the target audience differs from the circle of contacts and personal experience of the producer, the greater the risk that programmes will fail to meet audience needs. Particularly in developing countries, where producers tend to come from a more wealthy and educated elite, the psychological distance between producer and audience is very large.

For IRIBEN, as viewers watch the programmes at home, feedback would only be available through quantitative evaluations like data on viewing figures. Even ETC, as a part of the Iranian Ministry of Education which works more closely with schools, have no school visits for production; like IRIBEN, they also rely mainly on quantitative figures, such as data on how many schools are covered by the 'Roshd Plan' (See Figure 6-1, Chapter 6). However, in 1997, ETC established a project for some data collection on the 'Roshd Plan' and tried to elicit pupils' and teachers' comments on the programmes.

8.4.4.2 Monitoring and regulations

Feedback also can be obtained from independent or governmental regulators in order to assess whether the broadcasters fulfil their educational obligations. In Britain, all broadcasters are required to report annually on how they delivered their programmes and have to specify their plans for future operations.

The Office of Communications (Ofcom) is the regulator for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.[71] Under the Communication Act, Ofcom has to review public service television broadcasting (PSB) at least every five years. Ofcom has established broadcasting codes and policies to find out:

- How effectively, taken together, are the designated public service broadcasters (BBC, Channel 3, Channel 4, Five, S4C and Teletext—

[71] http://www.ofcom.org.uk/about_ofcom/, (26 February 2005).

collectively referred to as the 'PSBs') meeting the purposes set out for them in the Communications Act?

• How can the quality of PSB be maintained and strengthened in future?[72]

Channel 4's licence from Ofcom sets out the types of programming that the channel has to include in its service. Every year Channel 4 has to provide high-quality programmes towards its licence renewal, reviewed every ten years. Ofcom conducts detailed monitoring of output in all genres of television production and makes a substantial annual report.

For school programmes, until September 2003, the School Advisory Committee (SAC) under the Independent Television Commission (ITC) advised the regulator and Channel 4 on its schools output. The SAC met twice a year to assess and discuss the educational service provided by 4 Learning. The SAC advised 4 Learning pre-production in terms of the educational value of school programmes. While there was no obligation for 4 Learning to take the advice, the SAC were report to the Commission if the service was not achieving its objectives. Under Ofcom, however, as Boulton (2006) notes, the SAC no longer exists. She points out,

> the Communications Act 2003 sets out Channel 4's "special obligations" with regards to schools programmes. The Act requires Channel 4 to produce what Ofcom considers an appropriate volume of schools programmes. And it sets out that those programmes should be of high quality and suitable to meet the needs of schools throughout the UK.[73]

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[72] Ofcom review of public service television broadcasting Phase 3 – Competition for quality. Issued 8 February 2005, p. 5.

[73] Katy Boulton, Programmes Executive at Ofcom (author's personal correspondence via letter received 19th January 2006).

However, as Allen (2002) remarks 'ultimately, teachers will decide the fate of a series or programme—it will not be used if it fails to have educational purpose and does not fit with the national curriculum'.[74]

All activities and programme making at the BBC are regulated under the charter by a board of governors who are responsible for ensuring that relevant BBC programmes meet standards of due accuracy and impartiality. The Department for Culture, Media and Sports explains the structure of the BBC's charter as follows,

> Within the framework provided by the Charter and Agreement, the BBC Governors are responsible for ensuring that the BBC meets all its statutory and other obligations. However, the Secretary of State has certain powers, for example the power to approve and review the operation of new licence-fee funded public services.[75]

The governance of the BBC is mainly concerned with principles such as a) independence, b) rigorous stewardship of public money, c) accountability to licence fee payers, d) clarity of roles, and e) practicality.[76] So, as educational programmes specifically have a very important position in the BBC public service, the BBC governors' main concerns are to build a society strong in knowledge and skills. However, in addition to the BBC governors, Ofcom is also involved with some of the BBC regulations,[77]

> The Agreement gives Ofcom some regulatory functions in respect of the BBC, although the Governors retain some exclusive

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[74] Eileen Allen, Programme Manager – Schools, Independent Television Commission, (author's personal correspondence via letter received 10th September 2002).

[75] http://www.culture.gov.uk/broadcasting/bbc.htm , (28 February 2005).

[76] BBC welcomes 10 year Charter and secure funding and accepts the Government's new model of governance BBC Press Office website, 02.03.2005 http://www.bbc.co.uk/pressoffice/pressreleases/ (9 March 2005).

[77] The details of the BBC's involvement with Ofcom are set out in the 2002 Communications Act (particularly Section 12) and the Amendment to the BBC Agreement, http://www.ofcom.org.uk/about_ofcom/relbbc , (3 March 2005).

> responsibilities, such as ensuring the editorial independence of the BBC.[78]

Ofcom defines its position as the BBC regulator for the following tasks:

> Ofcom is responsible for monitoring compliance with Tier 2 regulation (e.g. ensuring the BBC meets its independent production quota), although in some areas, [Ofcom's] powers are limited to ensuring the BBC does not fall below current levels of provision.[79]

The combination of internal (BBC governors) and external (Ofcom) regulators, in addition to independent consultants, assures unaligned and high quality programme outputs.

In Iran, under Act 175 of the Iranian constitution, a council consisting of two representatives each from the president, the head of the judiciary branch and Islamic Consultative Assembly supervise the functioning of IRIB. However, appointment and dismissal of IRIB's president rests with the Supreme Leader. Mowlana (1989) points that until 1989 a council called '*Shora_ye Sarparasti*' [The Council of Guardianship] had the power to appoint the President of IRIB, but by a revised and supplementary constitution which was adopted in 1989, the supervision of IRIB was transferred to the spiritual leader and many of the duties and authorities of the council were transferred to the President of radio and television.

This absolute authority comes from the sensitivity of radio and television and its contents in relation to Islamic values, and the extraordinary anxiety about its possible deviation. Thus, the essential qualifications for the candidate of IRIB president rely more on Islamic issues rather than media capabilities. For instance,

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[78] http://www.culture.gov.uk/broadcasting/bbc.htm , (28 February 2005).

[79] Ofcom review of public service television broadcasting Phase 3 – Competition for quality, Issued: 8 February 2005, p.84-85.

Note 7 of IRIB management's law (1983: 124) defines the qualifications of candidates for president and his assistants as follows:

- be Moslem, knowledgeable about Islam, and practically pledged to religious duties;
- have to believe in and pledge [allegiance to] the Leadership or *Velayat_e Faqih* [guardianship of the jurist], based on the IRI Constitution;
- have sufficient knowledge of internal and international politics and dispositions;
- have capabilities in management and proportional expertise, and necessary knowledge; and
- have a clean record.

Although media knowledge and relevant background are not neglected in the third and fourth general qualifications in the above list, they have equal or lesser importance than Islamic issues, which influence all areas of IRIB's programmes. In fact, Figure 8-2 reveals that 44% of respondents at IRIB strongly agree and 45% agree that a shortage of media professionals among policy makers decreases the quality of IRIB's productions.

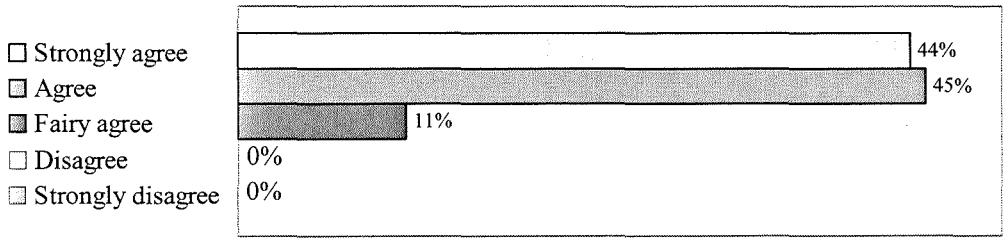

Figure 8-2

Subsequently, the structure of IRIB became heavily dependent on religio-political power rather than media knowledge, which creates many barriers to regulation. Following Ansari (2002),

> as IRIB is under the control of the supreme leader of IRI, the responsibilities of being in right direction are more crucial. All

> advantages or disadvantages and insufficiencies of such media will be attributed to Islam, *Velayat_e Faqih*, and clerics.[80]

In fact, with such a complex structure, it is impossible to separate productions from ongoing political issues or the general policies of the IRI government, and criticising IRIB remains political and sensitive.[81]

Hence, even those institutions that were established for control and regulation under the IRI constitution (e.g., the Council of Supervision of the IRIB) in practice became entirely ineffective. As Ahmad Borghani (2002), former member of the Iranian parliament and member of the Council of Supervision of the IRIB, mentions,

> ...from my two-year membership experiences at the Council, there is almost no clear and proper way to regulate IRIB; on the contrary, IRIB dictates what to do with regulation processes. IRIB with its enormous power has protected itself and its policies in a stronghold; only those who have a 'permission card' would be allowed to enter such territory, and obviously regulators do not have such credit![82]

The other obstacle affecting the regulation process is that unlike the BBC or Channel 4 in Britain, IRIB is entirely free from obligations like licence renewal or charter revision; its only commitment is to meet the criteria set forth in the IRI Constitution under the Council of Supervision, which in practice has little or no power to change or rectify anything.

Borghani (2002) advocates the establishment of independent broadcasting services to compete with IRIB and enhance both the quality of productions and

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[80] Iranian Students News Agency (ISNA) 18 June 2002, http://www.isna.ir/main/NewsView.aspx?ID=News-134723, (28 June 2002).

[81] As the Supreme Leader directly appoints or dismisses the president of IRIB, radio and television in Iran became like the formal voice and profile of the IRI government; criticising the management or its policies seems like a protest against the government.

[82] Iranian Students News Agency (ISNA) parliament news service 24-09-2002, http://www.isna.ir/main/NewsView.aspx?ID=News-159226, (19 February 2005).

opportunities for better supervision and regulations. He believes that even the structure of the Council of Supervision of the IRIB itself has to be transformed,

> ...it would be better to dismiss the current supervision system and replace MPs and executive members of the IRI government with media and communication experts, and specialists.

Current members of the Council, as Borghani mentioned, come with religio–political backgrounds and from government bodies, rather than from genuine experience in radio, television, communication, and associated areas. Hence, if such crucial replacements were made, the Council of Supervision of the IRIB would focus less on politics and its inevitable conflicts and more on professional, effective supervision and proper regulation. If in the future the Council were allowed to appoint the president of IRIB (like the BBC model), the policies and programming of radio and television could be criticised more freely and IRIB would be obliged to respond accountably to the Council.[83] In fact, all participants in the IRIB's questionnaire to some extent agreed with the regulation process and believe that IRIB can improve the quality of the programmes if a team of professionals and well experienced people monitor the processes of the productions in different levels (Figure 8-3).

[83] As noted in page 338, until 1989 the 'Council of Supervision' had such authority, however the charismatic characteristic of Ayatollah Khomeini, in fact had enormous effect on all issues, so the Council of Supervision of IRIB was not an exceptional and their decisions on any changes instinctively followed the supreme leader's ideas.

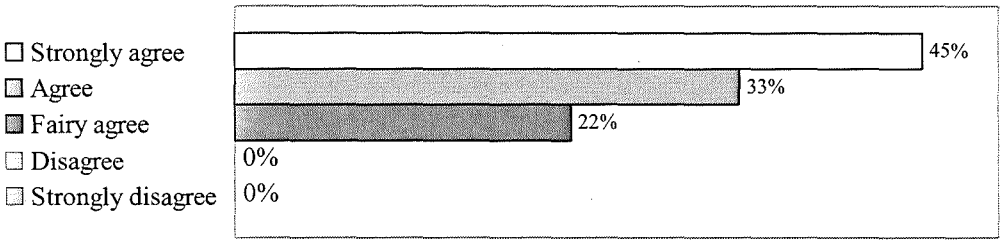

Figure 8-3

8.4.4.3 Evaluation

Evaluation is a form of feedback, which can be delivered by educational experts and can reveal the strengths and weaknesses of educational contents in programmes. The main purposes of evaluating schools television in Britain are to learn: a) how many pupils have watched the programmes, b) how the programmes affected pupils' learning progresses, and c) how teachers are using the programmes.

For the evaluation of school programmes, Channel 4 Learning —until 2003— employed several approaches, including an annual survey, postal and telephone surveys, and data collection about the numbers and percentages of students using 4 Learning programmes. Occasionally, 4 Learning held focus-group meetings with groups of teachers to evaluate the programmes, as Richmond (2001) argues, 'with more detailed, accurate honest accounts of what they think about 4 Learning programmes'.[84]

It has to be mentioned achieving high-quality programmes is an obligation rather than an option. This is set out by Ofcom in the Channel 4 licence renewal,

[84] John Richmond, Commissioning Editor Channel 4 learning [1993-2003], interviewed by the author, 7 March 2001, London-UK.

> The Corporation shall ensure that any school programmes included in the Channel 4 Service are of high quality and are suitable to meet the needs of schools throughout the United Kingdom.[85]

To consolidate the evaluation process, representatives from The Department for Education and Skills (DfES) QCA, British Educational and Technology agency (BETCa) and Office for Standards in Education (Ofsted) met with 4 Learning three times a year in order to achieve high-quality school programmes. However, due to Channel 4's new policy on educational programmes, from September 2003 only Ofcom has dealt with such evaluation processes.

In addition to the annual report on how many teachers use the programmes and viewing figures for quantitative research, full surveys by independent research bodies (e.g., MORI)[86] evaluate the output of BBC Education.

In Iran, the Center for Research Studies & Program Assessment of IRIB[87] evaluates IRIB's overall output through quantitative viewing figures for its annual report. ETC holds meetings with groups of teachers at infrequent intervals to evaluate the programmes (mainly for a specific project). They watch a newly-produced programme and evaluate the contents against educational criteria. Moreover, there is a monthly informal meeting between policy makers at ETC and IRIBEN to coordinate production and meet ETC's commitment of 300 hours of annual school programming (Talebinezhad, 2004).

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[85] Channel 4 RDL, Ofcom (Office of Communications), 17 December 2004, p.14

[86] MORI provides a full range of quantitative and qualitative research services, and holds an important position within the British media, regularly providing senior staff as commentators across a broad range of topics. Source: http://www.mori.com/about/index.shtml, (4 March 2005).

[87] *Markaz_e Tahghighat, Motaleaat va Sanjesh Barnameh_ie_ye Sazeman_e Seda va Sima_ye Jomhouri_e Eslami_e Iran.*

The employment of independent bodies for regulation and evaluation is one of the fundamental and significant differences between schools television in Britain and Iran. As the study revealed, in Britain there are different independent institutions, which regulate or evaluate school broadcasting materials in order to deliver fair judgements on the quality of schools television for the benefit of education and audiences beyond the influence of broadcasting organisations. On the contrary, all radio and television materials in Iran are evaluated not by independents, but rather from within the organisations themselves. Under such a policy, regulation and evaluation is a closed circle of policy makers, programme makers, and regulator/evaluators acting through a routine and formalised processes, mainly without considerable influence. Based on the model of BBC Education and Channel 4 Learning, independent bodies can deliver viewers' opinions and challenge the broadcasting organisations. As a result, the quality of the programmes in any genre has to satisfy regulators and evaluators both inside and, more importantly, outside the organisations under strict broadcasting acts and obligations; otherwise, they will damage their credits and loyalty against their commitments, whether charter or licence. However, internal regulation and evaluation, which is run by the organisations themselves will not create any serious challenge to IRIB or ETC to make better quality productions.

8.5 Compatible production criteria

The final section of this chapter is devoted to the compatible production criteria, which this study aims to identify. However, it has to be mentioned that overall the findings of this research will not claim any straightforward instructions

and solutions. Rather, it offers some suggestions, which can be adapted and employed by the IRIB Education Network for its future improvement.

As mentioned in Chapter 3, educational television is located between two mega organisations of education and television, following Schippers (1992, quoted in Cogill, 1992:201) a model of educational television in practice may emerge through one of the following three formations:

1- Schools television in the hands of education. In this case it is a ministry or department of education, which determines the nature of educational series.
2- Schools television is a department of general broadcasting but with structural links to education.
3- Schools television is a department of general broadcasts with no structural links to education.

Cogill believes that a good model of schools television should have a structural link to education. She notes that under such conditions the models 'guarantee greater effect because they are close to the heart of education, its effectiveness implies increased participation and appreciation, they put television production on a sound educational basis acknowledged by those in education, and finally in times of crisis, organisations can depend upon support from both broadcast and education authorities' (1992: 201). Table 8-6 shows the models of schools television in Britain and Iran and their links to education.

Table 8-6 Models of Schools television in Britain and Iran

Models of Schools television			
United Kingdom		Iran	
Channel 4 Learning	BBC Education	IRIB Education Network	Educational Technology Centre
Schools television is a department of general broadcasting but with structural links to education		Schools television is a department of general broadcasts with no structural links to education.	Schools television is in the hands of education. In this case it is a ministry or department of education, which determines the nature of educational series.

As mentioned in Table 8-6, IRIBEN has no clear structural link to education. In fact, with regard to school programmes they merely schedule and broadcast ETC's school productions without considering the quality of the programmes and the values of educational contents.

In contrast with BBC Education, which leads educational media innovations in Britain in so many areas, IRIBEN is mainly dependent on the other institutions for commissioning and production. Nouie (2005) mentions that IRIBEN does not play any role in determining the contents of school programmes, but is sensitive to technical deficiencies and concerned mainly with technical guidelines for broadcasting. He adds,

> IRIBEN will commission school programmes only if there would be a lack of production in some educational areas or when there are obstructions to the productions, which have been made by external television companies.[88]

As a result, IRIBEN has no substantial influence on the contents of school programmes and its position and central policy are mainly restricted to covering the

[88] Arman Noie, Head of IRIBEN Planning (author's personal correspondence via email received 3 April 2005).

broadcasting schedule and distribution. In other words, the capabilities of television are reduced and it is merely implemented as a container for carrying educational materials. In such circumstances, education and television operate in two parallel and separate spheres with no structural links.

8.6 Model comparison

This study revealed that the production criteria of schools television in Britain are based on a long process of detailed examination of television's capabilities for educational purposes. Accordingly, makers with the help of numbers of consultants are selective about subject matter and employ only areas of education which can be delivered by television, and leave the others to other media and learning activities. In fact, schools television in Britain uses potential educational materials in an integrated production process in which televisual materials and educational contents are balanced and inextricably intertwined. Hence, each element of education and television in the final programme distribute their functions in order to enhance the entire goal of the production.

According to the capacity model of Fisch (discussed in Chapter 2), there is a large gap between televisual materials and the processing of educational content in the style of Schools Television in Iran. Therefore, television and education remain separate spheres, making no considerable contribution to the other. In this production process – under the best conditions – education and television work in parallel; while they work in the same direction, they have very little relation. In fact, educational materials are often tangential to the narrative and the distance between the educational content and televisual materials is therefore large. As Fisch emphasises, under such

circumstances the working memory has to compete for comprehending educational content and televisual materials (see chapter 2). On the other hand, and as this study reveals, due to the lack of experienced educational programme makers, a high number of productions, an inappropriate budget, and an illogical precipitate for more programmes, educational content is not successfully translated for television. Hence, television is considered to be merely an apparatus for its rapid and broad transmission and its accessibility to a huge number of viewers, not for its specific potential for education.

On the other hand, as most schools in Iran still suffer from inappropriate educational conditions (i.e., the two-shift school system and crowded classrooms) and loads of content of textbooks, there is little opportunity for a multimedia platform. Inevitably, the process of education in Iran is mainly based on two strict rules a) transferring teaching materials and b) assessing pupils' performance. Hence, the procedure of learning and its complements like 'gaining attention' and 'stimulation', which can be provided through teaching methodologies and the employment of educational aids (e.g., using television) are neglected. As Hassanpour (2003)[89] points out,

> the educational system in Iran is output and not procedure-centred. Hence, in such a system there is no concern for the process of learning, but all attempts are for the assessment. There is no appropriate awareness of teaching methodology and its mechanism; therefore, educational aids have little room in the process of education.

Subsequently, these factors have influenced the production structure of schools television in Iran as a 'transmitter' for a model of formal educational materials

[89] Hassanpour Mohammad Hassan, Lecturer at *Shahid Mofatteh* Teacher Training Centre, in questionnaire for 'The Maths Channel', 29 November 2003, Tehran-Iran.

(mainly through complete courses and keeping restrictedly close to the formal textbooks)[90] in order to provide an alternative source for pupils in Iran, especially those who have less access to skilful teachers. Accordingly, the ultimate ambition of IRIBEN according to its slogan 'equal educational opportunities' refers to broad 'distribution' rather than the quality of programmes and relevancy of contents to pupils' needs and learning ambitions. As Biabani (2003:10) points out,

> our society is far away from appropriate educational opportunity. When we witness the limitations and shortages in our traditional education system we understand that the old methods are unable to meet the educational needs. Therefore, it is necessary to pay attention to the other instruments, [for instance] in our society all expect a mass media like television to overcome the inadequacies and obstacles to the educational system and specially defeat the geographical boundaries for both teachers and pupils.

Here the main tendency of production is based on distributing formal educational materials. MacMahon (1997:87) points out that "delivery is a central concern...whether or not the message is received or relevant is not a major concern". Hence, any compatible production criteria for schools television in Iran have to be consciously considered and adapted with these educational conditions and obstacles. However, it has to be mentioned that a growing of independent schools in Iran,[91] which are mainly run privately and based on tuition fees, are fundamentally important for the better use of media for education in the classrooms. For instance, in comparison to state schools, these schools are mostly well equipped with educational materials and provide small classes that allow teachers to use more interactive teaching processes and organise activities like using television and computers. The

[90] The Ministry of Education for entire levels of education and teachers provides textbooks in Iran and students are obliged to use them as formal education sources.

[91] *Madares_e Gheir_e Entefaee*

results of a questionnaire given to teachers and head teachers in this study revealed that more than 75% of teachers in independent schools use videos in their classrooms regularly and are very keen to have access to more relevant and attractive materials.[92]

8.7 Employing the models of Schools Television in Britain

According to table 8-6, both Channel 4 Learning and the BBC Education are based on a similar model in which schools television is a department of general broadcasting and has structural links to education, though the administrations are separate.

This study suggest that IRIBEN has to re-establish its policy on educational programmes, its management and the crucial process of commissioning with the aim of employing a model of schools television in Britain. For instance, employing a Channel 4 Learning model for IRIBEN would depend on having a healthy sector of external producers and independent production companies that are successful, variable from year to year, and which have the necessary skills to produce television and other resources of the required standard. In the model of Channel 4 Learning, with no in-house production, entire school programmes are commissioned with independent companies. This allows for less bureaucracy and less complexity of administration, but it needs to seek out a number of production companies that would be able to make the programmes. In addition, Channel 4's obligation under license to meet requirements for high-quality school productions as set by the broadcasting act should be considered as central to a compatible model for IRIBEN.

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[92] I designed a multiple choice and open-ended questionnaire containing 16 questions for 16 state and private primary and secondary schools in Iran. I received a total of 184 responses on 19 December 2001.

Compared with Channel 4 Learning, the general model of the IRIBEN is closer to that of BBC Education as both have in-house production and work with independent educational productions, or share their staff and technical equipment within departments. But according to Appendix IV, they differ in many areas, mainly in that BBC Education has had strong editorial experience in its more than 80 years of successful school broadcasting (radio, television, online and so on) while IRIBEN as mentioned earlier is still either a broadcasting centre for the transmission of ETC's school programmes or merely a provider of direct teaching materials in the 'talking head' style.

One practical suggestion is that IRIB, which has the power to reach nearly all pupils in different regions of Iran, has to take full responsibility for commissioning educational programmes, providing valuable programmes and leading of the use of media in education.

To do this, 'educational programmes' have to be re-identified for IRIB policy makers and they have to believe that broadly 'distributing' educational materials, while important, is not a proportionate mission for a mega-organisation like IRIB (with about 28,000 employees). But practicing and innovating 'high quality' educational programmes will enhance IRIB educational values and contribute towards its recognition of its initial ambition of being a 'public university'. The policy makers at IRIBEN have to believe that they can play a major part in the national drive to improve educational standards, and following the BBC, they have to relocate 'education' at the heart of the IRIB in order to provide high quality educational programmes for all.

Under such long-term, constant, and comprehensive policy, several experienced and creative production teams would also be available to provide a new generation of educational programmes. IRIBEN, ETC and independent producers would be able to restructure school programmes toward better television quality (i.e., more indirect learning materials and narratives), and with the help of numbers of educational consultants in different institutions, schools television in Iran can practice balancing educational and televisual materials more professionally and effectively.

8.8 Summary and Conclusion

This study revealed that the production criteria of schools television in Britain are based on a long process of detailed examination of the capabilities of television for educational purposes. Significantly, producers who have the help of numbers of consultants are selective about subject matter and employ only those areas of education, which can be delivered effectively by television. In fact, based on a long experience of educational broadcasting, schools television in Britain uses potential educational materials in an integrated production process in which televisual materials and educational content are balanced and inextricably intertwined. Hence, in the final programme both elements of education and television are merged and both cultures strengthen one to the other to enhance the overall goal of educational production.

In contrast and due to the lack of a concrete functional structure, schools television in Iran education and television keep to their specifications without making any considerable contribution to one another. In fact the educational contents

and televisual materials are tangential to each other, in which provide more distance between processing televisual materials and educational contents. As a result working memory with shortage of capacity faces more challenge to understand and absorb two channels of information. Here, education and television are seen to follow separate but parallel paths with little in common. Hence, the function of television has to be considered as an apparatus for rapid and extensive transmission and its availability to large numbers of viewers, rather than for its specific potential for education.

This study suggests that schools television in Iran has to expand its consultation sources, apply independent bodies outside the institutions and gather different views to achieve comprehensive comments to establish adequate and reliable educational television programmes. Moreover, and as a long-term policy, both IRIBEN and ETC have to train and employ educators as programme makers in order to make stronger links between the worlds of education and television.

Following the model of schools television in Britain, IRIBEN has to concern itself with the capabilities of 'television' itself and practice integrated production structure and intertwine education and television. IRIBEN also has to restructure its distribution and develop the culture of using audiovisual materials in schools under the provision of teachers. Educational programmes have to be re-identified for IRIB's policy makers in which broadly 'distributing' educational materials however is important but it is not proportionate mission for schools television. These primary policies will assist IRIB in relocating 'education' at the heart of the organisation (like the BBC) and will enhance the values of educational production and the reputation of

IRIB. This will also enable it to pursue its initial spiritual ambition of being a 'public university' that can provide high quality educational programmes.

Chapter 9

CONCLUSION

The main objective of this study was to find out to what extent Schools Television in the United Kingdom can be applied as a comprehensive 'model' for the Education Network in Iran. To do this, different aspects of Schools Television in both countries, spanning four institutions (Channel 4 Learning and BBC Schools in Britain, and IRIBEN and ETC in Iran), were reviewed. According to the central questions of this study, three major areas of Schools Television were identified: a) the relationship between Schools Television and major theories of learning, b) television production criteria for educational purposes, and c) the structure of Schools Television with a view to developing a compatible model, examples from Britain and Iran were examined, compared and analysed.

Eventually, this investigation has presented conclusions on various issues and revealed differences between Schools Television in the United Kingdom and Iran in terms of historical context, media literature and experiences. These revealed both the feasibility of and the obstacles to the implementation of production criteria and models, and refer back to the research questions and aims of the thesis.

9.1 Implementation of Learning Theory

According to the first research question, this study assumed that one of the advantages of Schools Television in Britain is that it is capable of interconnecting learning theory and practice within its productions. As Berliner and Calfee (1996) note, such a fusion can consolidate the relationship between education and television.

In reviewing the main learning theories in Chapter 3, it was revealed that the nature of Schools Television may be compatible with behaviourism and to some extent with cognitive learning theories, but can rarely employ constructivism.

For instance, and according to Table 3-1 (Chapter 3, page 76), behaviourist theory can be implemented for educational television to a) provide a sequence of stimulus and response actions in the learner, b) transmit fixed truths to students, c) transmit a measurable and observable response to internal or external stimuli, d) provide guidance for desired behaviour, and e) be applied for various training courses. By using insights from cognitive theory, television would be able to encourage learners to comprehend meanings and integrate knowledge into their own thinking. It also can help students link new information to existing knowledge as part of the learning activity, and support their attention, encoding, and retrieval process. However, the potential of Schools Television for constructivist theory will be limited to modelling and guiding the knowledge construction process to complement students' learning activity.

Gagné developed and employed behaviourist and cognitive learning theories and established different learning 'events' as practical guidance for instruction processes, which resulted in a theory of the 'condition of learning', according to Gagnon and Collay (2001:12),

> [Gagné] suggested that instruction should be structured to involve problem solving and to ensure higher levels of understanding. He introduced a focus on learning outcomes instead of on objectives [and] specified nine relevant instructional events that vary with specific content and the type of learning outcome achieved.

The ideas of Gagné on learning events were found very useful for analysing Schools Television and the value of production structures in relation to learning theory. Therefore, to assess the value of Schools Television in Britain and Iran, I examined and analysed two samples of school programmes from each institution using Gagné's theory.

It is found that while both BBC Schools and Channel 4 Learning are to some extent extremely capable of meeting Gagné's learning theory in different aspects, they do not 'subscribe' to any specific 'learning theories'. In Schools Television in Britain, various learning theories have been indirectly and unconsciously employed and integrated into the school programmes. This is due to the combination of the background of the production team, whose members have worked in different educational positions (e.g., teacher, head teacher, educational consultants), and following the guidelines of the production (i.e., national curriculum) and having the assistance of freelance educational consultants, and an advisory team.

In relation to implanting learning theory for Schools Television in Iran, it was found that, similar to the tradition of teaching in Iranian schools, the behaviourist paradigm has been widely imitated. This is seen in the way that schools transmit fixed truths to students, whereby the teacher aims to achieve a desired behaviour and ensure that students have learned all the transmitted knowledge.

Overall, the study revealed that the sample of Schools Television from Britain ('The Maths Channel') fulfilled Gagné's various principles of instructional design. For instance, according to the findings in Chapter 7, 35% of 'The Maths Channel' is dedicated to 'gaining attention', or 'presenting the stimulus material'; it motivates

pupils through a variety of innovative production styles such as investigative documentary, creative animation, narrative, and entertainment. 'Maths for Grade 5', however, the sample of Iranian Schools Television, was based on the 'talking head' model and stimulus material was mainly delivered directly by a maths teacher.

In another example relating to Gagné's theory, there are six optional pause points in 'The Maths Channel' for 'eliciting performance', in which pupils are able to interact with their fellow students/teacher in order to recall their knowledge about the educational concepts dealt with in the programme. The value of 'Maths for Grade 5' is limited to interactions between teacher and pupils in the studio (as a part of the presentation processes). This, however, mitigates against the purpose of television, which has to inspire and create a centre of attention for audiences. For educational television that pupils watch mainly at home, a televisual structure that resembles a real classroom may not be able to inspire viewer interaction successfully.

The employment of learning theory for any kind of media has to be adapted and transformed correctly; otherwise, it might interfere with the function of programmes learning aims. Schools Television cannot merely convey information and expect understanding to follow; rather, educational content have to be adapted for the television medium and must be agreed through a body of educational consultants that engage in proper outlining and production designing.

One of the problems with Schools Television in Iran is that the learning processes are implemented for television exactly as they are conducted in a real classroom, without changing the method for the new medium. As Kozma (1994: 7) believes,

> in the unique qualities of various media and asserts that instructional designers must carefully design their content to take full advantage of them. Methods cannot be transferred from one medium to another if designers change the medium, they must completely change their method.

On the other hand, due to the lack of educational consultants and properly planned meetings throughout the production process, there is no attention to differences in medium. As a result, the confirmation of the contents comes from an educational technologist, who mainly considers the accuracy of the knowledge in relation to the learning theories, and who is entirely unaware of the influence of the television and its specific capabilities, effects, and functions.

9.2 Television Production Criteria for Educational Purposes

The second question of the research was how and why do the television production criteria relate to educational purposes? To find the answer, the detailed analysis of the structure of sample programmes from BBC Schools and IRIBEN of this study revealed differences in the overall structure of Schools Television in the UK and Iran. It was seen that Schools Television in Britain it is largely based on indirect educational materials that combine entertainment and education. Both Channel 4 Learning and BBC Schools normally employ a wide range of drama, animation, documentary, entertainment and factual programmes, and do so mostly in the form of 'edutainment', as the CBBC Channel's proposition emphasises 'learning through fun', and for schools they have aimed to make the programmes as entertaining and imaginative as possible.[1] In fact, the educational materials have to

[1] '80 years BBC for schools', Flyer of the 80th anniversary of BBC school broadcasting, BBC 21cc, The Media Centre, 1st April 2004, London.

be invisible within the programmes. Moreover, to create an integral relation between televisual materials and educational contents, following the capacity model by Fisch, the content should be embedded into the structure of the programmes so that working memory can effectively comprehend the concepts. Bates (1984: 183) mentions 'professional standards, at least at the BBC, require producers to balance three pressures: the need for excitement, the need for integrity and the need for reliability. The ultimate objective of this structure is to provide innovative programmes and services, which add value to lessons and to learning.

This study revealed that the production model of Schools Television in Britain is based on a long process of detailed examination of the capabilities of television for educational purposes. Significantly, producers who have the help of many consultants are selective about subject matter and employ only those areas of education, which can be delivered effectively by television. In fact, based on long-term experience with educational broadcasting, Schools Television in Britain uses potential educational materials in an integrated production process in which televisual materials and educational content are balanced and inextricably intertwined. Hence, in the final programme, both elements of education and television are merged and both cultures strengthen one another to enhance the overall goal of educational production.

In Iran, the delivery of educational contents is more direct and based mainly on the 'talking-head' production style. This structure of programmes can be compared with MacMahon's (1997: 87) 'transfer', and 'shaping' theories, which are capable of delivering educational content directly, with little attempt at using televisual

materials, and through a flat production structure. In fact, Schools Television in Iran is heavily devoted to the formal textbooks from the IRI Ministry of Education. As a result and as an example, 71% of the programme of 'Maths for Grade 5' is delivered with a 'talking-head', when a teacher (as the host) presents the content of the textbook on television using only a minimum of televisual materials. Inevitably, the structure of programmes is mainly based on the imitation of classroom style, as in many of IRIBEN's programmes in which an expert talks directly to a camera.

Based on Fisch's capacity model, in this sort of programme the processing of educational contents and televisual material would be tangential to each other and the gap between two sources of information (education and television) would be large. Therefore, as the mental resources needed for comprehension are generally devoted mainly to the narrative component of the programmes, fewer resources are available for processing educational content. As a result, due to the absence of well-known televisual components (e.g., entertaining, inspiring, and use of narrative-based materials) the programmes may fail to achieve their pedagogical objectives.

In fact, and due to the lack of a concrete functional structure, Schools Television in Iran employs a production process, in which education and television keep to their specifications without making any considerable contribution to one another. Here, education and television are seen to follow separate but parallel paths, with little in common. Hence, the function of television has to be considered as an apparatus for rapid and extensive transmission and its availability to large numbers of viewers, rather than for its specific potential for education.

9.3 Compatible production criteria and models

And finally for the third central question of this research, I examined the different production criteria and models of Schools Television in Britain and Iran. It was found that implementing compatible production criteria and models of Schools Television in Britain for Iran, one which recognises the historical background as well as media literature and experience, requires a number of fundamental and comprehensive reconsiderations. In Chapter 8, the comparative study of administration and finance, production, distribution and support, and feedback and assessment revealed the advantages and disadvantages of core areas of Schools Television in Britain and Iran. The feasibilities of each section for the creation of a compatible production model to enhance the quality of Schools Television in Iran can be concluded as follows below.

9.3.1 Model of administration and finance

In Chapter 6 it was discussed that IRIB is a state radio television organisation, and although it expanded to include many channels during the last decade, there are no significant differences between these channels as they are strongly dependent on the Iranian government both politically and financially. They do not compete with each other in any area; in fact, they even occasionally exchange programmes, and there is subsequently no effect on programme quality. Following Mohsenian Rad

(2001), 'the problem of audiovisual media in Iran is not the multiplicity of channels, but diversities'.[2]

Professionals and critics believe that the Iranian constitution has to allow the establishment of independent television channels in order to improve the administration and finance of producing better quality programmes. They argue that competition between independent television channels forces them to make programmes on the basis of extensive research, and which are based mainly on viewers' desires; in fact, it can be said that independent television is more audience-centred (*ISNA*, 23 November 2002).

In contrast, in Britain there are two television channels, which provide school programming. The BBC and independent television channels (ITV Schools and later Channel 4 Learning, see Appendix IV) have been engaged in such competition since 1957. For instance, ITV inaugurated the first Schools Television service in Britain,[3] leaving the BBC behind by a few months.[4] However, it has to be noted that for teachers it is not important who has made or broadcast the programmes; they just want the programmes to be good for what they need. However, such rivalry has indeed provided them with various high quality televisual materials in several areas to select from.

BBC Schools produces the programmes mainly in-house, and about 25% of its productions are commissioned to independent companies. Channel 4, however, has

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[2] Iranian Students News Agency [ISNA], http://www.isna.ir/main/NewsView.aspx?ID=News-14988, (16 May 2001).

[3] Programmes were made by Associated-Rediffusion, an independent television company, which worked with ITV.

[4] ITV School broadcast the first series of Schools Television in May 1957, and a few months later in September— after two years of piloting—the BBC inaugurated its Schools Television service.

no in-house production in any genre of television programming and all Schools Television programmes are commissioned to independent companies. In both models, Schools Television in Britain is a department of general broadcasting but has structural links to education.

In Iran, there are also two kinds of Schools Television. ETC (that is, the audiovisual department of the IRI Ministry of Education), which produces non-broadcast school programmes, and the IRIBEN, which is a separate educational television channel and dependent on the main body of IRIB. For school programmes, in fact, more than 50% of IRIBEN broadcasts are covered by ETC's productions, but IRIBEN has no substantial control over ETC's planning, commissioning, production and evaluation processes. Additionally, the IRIBEN for its own productions also has no structural links to education.

In the current system of Schools Television in Iran, ETC can be recognised as the 'maker' and IRIBEN as the 'broadcaster'; however, this relation is very different from the model of Channel 4 Learning in Britain. For instance, unlike IRIBEN, Channel 4 Learning has full authority over of the contents of its Schools Television. Channel 4 Learning provides a list of topics to all independent television production companies and only commissions the best proposal for each category; it also attentively pursues and supports the entire production process from beginning to end.

In terms of funding, there is a massive difference between Britain and Iran. The BBC provides around £6 million each year for Schools Television, raised from the revenue of public funds for television licence fees. In 2005, Channel 4, which is an independent television company and self-funded through advertising revenues, had a

Schools Television budget of around £10 million. In addition, other financial resources from independent companies occasionally support some Schools Television programmes.

In Iran, on the other hand, although IRIB is given a budget from the government, public funds and even commercials, the IRIBEN's annual budget for Schools Television is equivalent to £500,000. In comparison, the ETC's budget, which is also drawn from the Iranian government, is equivalent to about £1 million. The result of interviews and questionnaires distributed in Iran for this research show that many programme makers believe the inadequate budget is the main reason for the low quality of school programmes produced in Iran and has to be seriously reviewed. However, this is not the only reason for low quality programming in Iran.

As this study revealed, there are other important issues, which also have to be addressed by the policy makers in Iran. As long as television is implemented merely as a 'transmitter of educational materials', simply increasing the budget or promoting 'mass production' cannot resolve the obstacles.

9.3.2 Model of production

The main objective of the production of Schools Television in Britain is to work in those curriculum areas that television can best assist. Both BBC Schools and Channel 4 Learning try to provide a selection of topics, which are capable of helping teachers and pupils in the classroom gain access to very good educational television, in which programmes with high production values can be used to achieve clear educational objectives. They design television programmes, primarily in topic areas that can assist teachers in meeting the objectives of the national curriculum. For

instance, the BBC's commitment to education is the provision of learning support for schools, encouragement of lifelong learning, and exploitation of new learning possibilities. These are facilitated by interactivity, and the BBC's main production objective is to supply curriculum-based content and support to children, parents and teachers via radio, television and the Internet. However, BBC Schools' outputs are much wider than the provision of formal learning materials (BBC Annual Report and Accounts, 2003-04).

In fact, the objectives of Schools Television, both at the BBC Schools and Channel 4 Learning, can apply Bates' view that they 'exploited the advantages of the medium in a given context for learning purposes' (1980:394). Here the ultimate concerns are neither merely 'good television' nor 'mass production', but the productions are based on televisual capabilities, which provide selective and valuable educational resources.

The aim of IRIBEN is to assist pupils at home or those who have no access to qualified teachers. The ETC, although very similar, aimed to supply classroom assistance to teachers and pupils with taped audiovisual materials. The production objective of both IRIBEN and ETC is to provide an entire range of teaching textbooks as courses. Such production policies reveal that Schools Television in Iran is more enthusiastic about the quantity, rather than the quality, of programmes.

Naturally, for any media, there are certain areas that cannot be covered and these have to be abandoned or produced in collaboration with others. While the policy of 'mass production' and provision of 'televisual materials' for the entire teaching textbook are production objectives in Iran, they have to be considered as

key obstructions to the quality of Schools Television. Such production objectives and their effects on the progress of pupils have to be fundamentally assessed. This would assist policy makers at IRIBEN and/or ETC to decrease the area of production and be more selective about the topics for which television can be effectively implemented. However, as long as educational policy in Iran is 'output-centred' and not 'procedure-centred' and there is no concern about the learning process, but rather a continued focus on the 'delivery' and 'collection' of educational materials, the expectation for Schools Television will remain 'mass production'. Iran with a teacher-centred, and 'banking' education policy, cannot take full advantage of Schools Television. Subsequently, there will be little hope for any change to the objectives of the production of such medium in Iran.

Long-term experience in educational broadcasting has provided important achievements for school radio and television in Britain. Firstly, programme makers learnt how to co-operate with educational authorities, and secondly they realised the importance of making connections with their audiences and understanding their needs. Due to the strength of such relationships, education officers who have backgrounds in teaching or education and are specialists in national teaching strategies and subject professions have played important parts in helping local education authorities, colleges and schools. For example, they have done in-service work and kept programme makers in close touch with the changing needs of the schools. In fact, for both BBC Schools and Channel 4 Learning, meeting educational needs is the ultimate production objective; they believe that without this goal the programmes will be of little or no use.

During different stages of my observation at BBC Schools and in meetings of the Primary and Secondary Programme Committee, I found that co-operation between school and production people can assure that what the BBC was producing would be useful in schools and that it would be picked up and used by teachers and pupils in the classroom. In other words, bodies from both school production and education strengthen the relevance of educational needs for school radio and television production, and vice versa.

The observations also revealed that for the BBC, collaborating with teachers and considering their needs are important tasks, as they strongly believe that this also enhances valuable understanding between teachers and producers in relation to educational needs and capabilities and the limitation of broadcasting materials.

Due to immense educational needs, in Iran, IRIBEN and ETC support the policy of making entire areas of 'teaching textbooks' a priority for Schools Television. This might be seen as evidence of a strong link to overall educational needs, but the study shows that the only link between programmes and the educational world is an educational technologist who is not in touch with viewers either in schools or at home. Compared with Schools Television in Britain, which is supported by various sources of consultancy and background educational knowledge among decision and programme makers, the educational link in Iran is naïve and there is a significant contrast, which has to be considered by policy makers in Iran. On the one hand, there is an army of educational consultants and advisors who help school programme makers in Britain to focus on selective topics that can best assist education. On the other hand, while there are limited sources of educational links of

any kind in Iran, there are many school productions for large areas of teaching textbooks. This has a negative effect on the quality of the school production in Iran. A strong link and permanent communication with educational institutions, and a balance between educational needs and the capabilities of televisual materials, create reliable Schools Television. For decision makers at IRIBEN and ETC, it has to be re-emphasised that the ultimate objective of Schools Television is to meet educational needs and not those of the makers or broadcasters.

9.3.3 Model of distribution and support

This study has shown that the policy of distribution of Schools Television in Iran is inefficient and paradoxical. On one hand, IRIBEN broadcasts school programmes in parallel with other mainstream television channels, and pupils have to watch such materials—unsupervised—at home. On the other hand, under the policy of the Iranian government, ECT are not allowed to broadcast the productions and have to distribute the programmes on videocassettes and CD-ROMs to about 19,000 schools. This cannot meet the enormous target of 14,356,000 pupils in 137,582 schools all around the nation.

Although it might be said that most IRIBEN programmes are provided by ETC and that all pupils can watch them anyway, this is far from their initial educational objective on school programming.[5] This disharmony between these two institutions and their viewers also has negative effects on productions. Under such circumstances, only pupils in less than 14% of schools can watch the programmes in

[5] Provision audiovisual materials of the entire teaching textbook as a course for teachers and pupils to use in the classrooms.

their classroom with their teachers. Therefore, for the large number of the remaining pupils who may watch school programmes on IRIBEN at home (which is more likely transitory viewing), the policy of assessment and justification for providing and distributing school programmes is vague.

The other obstacle to such distribution is that IRIBEN does not, or better said cannot, support its productions with any kind of educational supplements like teacher guidance or pupil notes. This makes the programmes insubstantial and isolated from the procedures of ongoing educational policies. When IRIBEN and ETC insist on making entire teaching textbooks, viewers should follow whole programmes continually; doing otherwise will distract from the educational objective. Hence, under such a policy the lack of educational supplements is even more critical. The provision of educational supplements for both IRIBEN and ETC, which distributes school programmes directly to schools and for teachers to use in the classrooms, is totally neglected.

As was explained, however, in BBC school broadcasting the employment of educational supplements began as early as 1927 (just three years after the inauguration of BBC school broadcasting) This, however, re-emphasises the place of literature in Britain, which is also a sign of the basis upon which they cemented the position of school broadcasting for educational system. This flourished during more than eighty years and supporting materials expanded beyond term-time school broadcasting to various other media, such as CD-ROMs, DVDs and online services. While it is moving towards a new exciting era and materials such as 'digital curriculum', print media are still in the frontline of educational supplements and

broadly in use. For instance, in 2004 print resources to support the programmes included Teacher's Notes, Students' Guides, Posters, and the publishing list for the BBC Schools stood at around 1,000 items.[6]

Channel 4 Learning, like BBC Schools, supports its term-time school broadcasting with various supplementary educational materials such as CD-ROMs, DVDs, TV-ROMs, and online services for teachers and pupils at different levels. However, while providing such materials for Channel 4 Learning is an obligation, the fact is that without these high quality educational supports, Channel 4 Learning would not able to compete with BBC Schools.

Based on such differences, it is essential for both IRIBEN and ETC to review their distribution policies in order to deliver the process of giving educational information to pupils and effectively rationalise the function of various media. Following Hancock (1976: 12) 'the use of media must be preceded by a clear statement of educational objectives, and of the contribution which media can be expected to make to realizing these objectives'. For instance, Iranians can reconsider the well-known comments of Harold Lasswell on communication: 'who says what in which channel to whom with what effect' (1948, quoted in Curran, et al. 1982: 2) as guidance. This could enable them to assess the obstacles to IRIBEN from a different angle.

As mentioned earlier, in the main area of school programmes IRIBEN is simply a broadcaster and not the primary authority that controls the contents of the productions. It was also revealed that IRIBEN is not involved in the ETC's

[6] Ibid 1.

commissioning processes and is subsequently unaware of what educational content, as subject matter, are being communicated.

IRIBEN's most ambiguous policy is how channels are selected for delivering educational materials to pupils. School programmes are delivered through a dedicated television channel like the 'Education Network', but in parallel with other mainstream channels. Here, the priority for selecting a 'channel' is based on a policy of mass educational distribution rather than on providing a channel for educational communication.

As a consequence of IRIBEN's distribution policy, it is unclear to *whom* the programmes are broadcast. As IRIBEN is not confident about *who* is going to watch school programmes and be receivers of educational messages, it is difficult if not impossible to obtain an answer to *with what effect* they are broadcast.

On the other hand, however, ETC would be able to provide answers to the above questions regarding its own distribution; it must say that IRIBEN and its distribution policies have destroyed ETC's initial objectives. This is mainly because of the lack of observation about the way programmes are used, which affects the process of pupils' assessment. Also, another critical issue which can be raised is that IRIBEN employs ETC programmes without any attempt at re-instruction. In fact, as result of a lack of appropriate policies and inexperienced management and programme makers at IRIBEN, it simply broadcasts ETC programmes that are designed to be viewed with a teacher in the classroom. Moreover, it has to be mentioned that the broadcasting of school programmes on IRIBEN is permanent and not limited to term-time. Hence, IRIBEN's important priorities are mass production

and mass distribution in the sense of 'quantity' and scheduling of the Education Network, rather than issues like 'the quality' of the programmes.

9.3.4 Model of feedback and assessment

This study argued that various independent and governmental institutions in Britain give feedback to and assess Schools Television programmes at different stages. It is strongly assumed that without the process of permanent feedback and assessment, the most production objectives would not be achieved. BBC Schools has different advantages from many sources. Curriculum advisors and meetings among primary and secondary committees, as well as regular school visits by commissioners and production teams, vitally assist BBC Schools to understand what programmes to make. They also help the service decide how to make them inform the very early stages of planning through to the final broadcasting and process of eliciting feedback from schools. BBC and its educational objectives are also supported by the assessment and feedback of independent research bodies like MORI, the BBC governors, and Ofcom.

For Channel 4 Learning, evaluation and assessment are mainly provided by Ofcom, in addition to an online feedback system.

As shown in Table 8-6 (Chapter 8 page 346), in Iran there is no contact between either IRIBEN or ETC and schools. While there are some data collected on viewing figures and a few scattered and evaluations in some cases, none can provide valuable and permanent feedback and assessment for school programmes in Iran. In fact, when the most important link—connection with the viewers—is neglected, no

form of assessment can provide first-hand materials for programme makers to improve their productions.

As mentioned in Chapter 8, in Britain 'good' school programmes do not merely result from the ambitions of professional programme makers, but from a standard framework. Making high quality school programmes is required by broadcasting principles, and assessed by various regulators. Following Richmond (2000),

> The reason we [Channel 4 Learning] do pretty well [...] is not that we are all geniuses. There are good, bad and indifferent people amongst our number, like everywhere else. We do pretty well because there is a framework of regulation, of law, which allows choices to be made, and traditions of work to be established, and people of talent to flourish.

In contrast, the lack of clear standards and regulations in the form of assessments and requirements makes Schools Television in Iran less accountable and therefore less effective. Such ignorance undermines the quality of the programmes and their objectives.

9.5 Feasibility

However, the feasibility of these models and their compatibility depend on fundamental reforms in both the educational and broadcasting systems in Iran. Apart from the vital necessity of re-establishing new policies on using 'Schools Television' to support education in Iran, and based on the findings and evidence of this study, the following suggestions can be put forward,

a) IRIBEN and ETC have to expand their consultation sources, apply independent bodies outside the institutions and gather different views to achieve comprehensive comments to establish adequate and reliable educational television programmes.

b) IRIBEN, with its immense power of broadcasting coverage (like the BBC), would be able to play a leading role in Schools Television. To do this it has to change its policy on the process of programme commissioning and should take full responsibility for the quality of educational contents as well as televisual materials.

c) As a long-term policy for the growth of media culture and the development of skilful manpower, IRIB, with its massive technical equipment and experience in training, would be able to establish different classes and provide various courses to the public and individuals, beyond its restrictive principles on recruitment.

d) By implementing a model of BBC Schools and through establishing a long-term policy, both IRIBEN and ETC have to train and employ educators as programme makers in order to make stronger links between the worlds of education and television.

e) Following the model of Schools Television in Britain, IRIBEN has to concern itself with the capabilities of 'television' itself and practice an integral production structure and intertwine education and television. This would help develop and refine criteria for employing media to its best effect.

f) IRIBEN has to restructure its distribution and develop the culture of using audiovisual materials in schools under the provision of teachers.

g) Educational programmes have to be re-identified for IRIB's policy makers in which broadly 'distributing' educational materials, however, is important but it is not proportionate mission for Schools Television.

h) The Iranian government has to provide concrete broadcasting acts and various comprehensible regulations for both IRIBEN and ETC, as well as an approach to a standard of televisual materials.

i) The Iranian government has to support and encourage independent bodies for the purpose of conducting surveys, feedback, evaluation, and assessment both inside and outside the IRIBEN and ETC.

Moreover, educationalists and media researchers from different institutions in Iran have to make substantial links with forerunning investigators all over the world in order to update, compare, contribute, and practice their findings.[7] This would improve and the knowledge of the field and support the contemporary studies on education and media toward new theories and technological innovations.

These primary policies will assist IRIB in relocating 'education' at the heart of the organisation (like the BBC) and will enhance the values of educational production and the reputation of IRIB.

[7] For instance, more than 500 full and brief research papers and various tutorial secessions are presented annually in conferences like ED-MEDIA [World Conference on Educational Multimedia, Hypermedia & Telecommunications]. I had the opportunity to participate in and present a concise version of my research paper in ED-MEDIA 2005, held in Montreal-Canada, and to share my idea with various researchers and professionals from different countries and backgrounds. The presentation led me to understand the limitations and advantages of this study and initiated essential questions for further research.

9.6 Further research

Early in this study, it was mentioned that the number of national and original investigations in the area of mass communication, in particular the field of radio and television, in either pre- or post-revolutionary Iran are critically few. It was briefly stated that in spite of the situation whereby the Iranian people are overwhelmed by enormous numbers of television programmes and television is the most important form of entertainment as well as an informative tool, there is little evidence of research, written material or practical studies into television. Subsequently, it is highly unusual to find any sort of documentation or research on a subsidiary topic like 'Schools Television' at the IRIB and ETC.

For instance, this study struggled endlessly with the unavailability of simple reviews about the history of the establishment of radio and television in Iran, particularly regarding issues around 'Schools Television' and details about IRIBEN and ETC. This immobilised the research procedure at different stages and can be evidence for the necessity of extensive investigations into a range of radio and television programme genres.

Schools Television, like other programme genres at IRIB, suffers from a lack of background information and research and a gap between ideas and practice. Such obstacles are even greater for educational purposes, where producers have to overcome difficulties not merely in television production but also have to be prepared for dealing with challenging educational issues.

However, this study tried to establish that Schools Television in Britain is a valuable hallmark in the field and to use this the comprehensive investigation of it to

implement a series of suggestions in order to create compatible production models to enhance the quality of Schools Television in Iran. There are still many areas, however, which have to be considered in future research. From the bases of current historical and comparative research and as a result of expanding the subject matter and adding various studies to the field, the following suggestions for future research can be made.

- The effects of mass production of Schools Television in Iran, in particular doing courses and delivering whole teaching textbooks in relation to educational needs, should be considered and analysed in detail. This will help IRIBEN to be more critical in those areas in which television does not work and to become more 'selective' about educational issues and needs related to televisual capabilities.

- It was revealed that those who are involved with Schools Television in Britain have backgrounds in the field of education and that this is an important advantage in making reliable school programmes. In relation to this, another issue for further research is the perception of the recruitment of IRIBEN and/or ETC policies. This would support an assessment of the background knowledge of production teams in relation to the quality of school programmes.

- Based on the findings of this study, large budgets are not the only reason for the success of Schools Television in Britain. Other factors such as relevant background knowledge, adequate training, diverse bodies of consultants,

creativity and even the instinct of programme makers are also very important. Hence, another area for investigation might concentrate on the financial structure and possible sources of budgets for Schools Television in relation to the quality of programmes. This would give us knowledge about to what extent the success of school programmes is based on budgetary factors in comparison to other related factors.

- The effects of new technologies on Schools Television in Britain are another field for future research. For example, it is important to study the BBC's digital curriculum. Such research would give IRIBEN basic information about how to transfer into the new generation of technology and the opportunity to study how to make such knowledge compatible with the needs of the education system in Iran.

- A study of the possibility for a joint or co-production of a Schools Television series between Iran and the UK can also be considered for future research. Such study could examine the effects of professionalisation and the improvement of the production processes by which educational programmes are created in the United Kingdom. This would help IRIBEN and/or ETC appraise their competences with BBC Schools and/or Channel 4 Learning in the context of real practices.

Inattention to such investigations and other relevant topics not only causes more obstacles for the creation of reliably high quality Schools Television, but also

increase the lack of knowledge, both theoretically and practically, about the incoming generation of technologies for learning in the very near future.

Overall, any major or minor focused studies on current and innovative technologies for education, as well as of their evolutions both nationally and internationally, would first of all help to add vital literature to the field. Second, re-emphasising the BBC Schools' objectives, this will assist in discovering new formats, new approaches, new means of communicating and connecting with students, teachers, and parents. But the reason remains the same—to support quality teaching and learning in the classroom and beyond.

Appendix I: Full Script of 'The Maths Channel'
Age: 10 – 11
KS2 / Level C, Level D
(Part one: Number: Place Value, Decimals and Rounding)

Written by: Steve Barlow, Steve Skidmore (Kenneth Confronts), Michael Coleman (Deadly Divisions)
Educational Consultant: Pete Mullarkey
Director (Check It Out): Melissa Burhop
Producer and director: Judith Tyrer
BBC Education for children, United Kingdom - 2001

Opening Sequences

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
1	Opening title sequence	Music + Sound effects	22"	Gaining Attention	--	The secondary maths leading title	Computer animation
2	W/S Maths Channel presentation studio set	Music + Sound effects	6"	Gaining Attention	--	Introduction	Studio + Computer
3	Crash zoom into c/u presenter	JEREMY: Welcome! This is … "the Maths Channel"	7"	Gaining Attention	--	Introduction	Studio + Computer

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
4	CUT to other angle Graphics menu screen slides from top to bottom presenter ducks to avoid Each heading highlights as Presenter voices it • 01:15 Number: Place Value decimals and rounding •27:00 Number: fractions and percentages •48:00 Number: Factors and prime numbers •56:30 Calculations •75:45 Algebra •82:15 Shape and Space •92:45 Measures •113:15 Data Handling	JEREMY: And I am Jeremy Bodmas. If you like your maths up front and in your face you won't be disappointed JEREMY: On "The Maths Channel" today: JEREMY (V/O): "Number and Number Systems"; "Calculations"; "Algebra"; "Shape & Space"; "Measures" and "Data Handling".	9" 4" 10"	Gaining Attention Informing learner of objective	--	Introduction	Studio Graphic

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
7	CUT to M/S Presenter in studio simulated PAUSE button appears of he points to it it disappears	JEREMY: Remember! Whenever you see this symbol it's a good time to pause the tape. So take your pick and spool forward to the topic of your choice now.	12"	Gaining Attention	--	Introduction	Studio + Visual Effects
Number of shots: 7			Total time: 70"				

Segment 1. Check It Out

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
8	Graphics menu • *01:15 Number: Place Value decimals and rounding* highlighted	JEREMY (V/O): First up on "The Maths Channel" [STING] Number: Place Value, Decimals and Rounding.	3" 7"	Gaining Attention Informing learner of objective	-- --	Introduction for 'Check It Out'	Studio + Graphics
9	CUT to studio, crash zoom into c/u presenter	JEREMY: And our top stories today…	4"	Gaining Attention	--	Introduction	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
10	CUT to clip of Jessica and big cheque & footage of premiere	JEREMY (V/O): Jessica Tangent investigates place value in 'Big Numbers'…	4"	Informing learner of objective	--	Introduction	Archive Materials
11	Clip of animation	Deadly dividing by 10 and a hundred…	3"				
12	Clip of undercover sequence	Calculating with money– the great burger-van rip-off	4"				
13	Footage of Olympic race	Get physical with decimals in 'Olympiad'…	3"				
14	Clip of Street Maths sequence	Mathematical cowards Have no hiding place in "Street Maths"	5"				
15	Clip of weather report	And my weather report dips below zero…	5"				
16	CUT to studio and Presenter	JEREMY: And now, if your taste in numbers is big & beefy then the Maths Cannel's Jessica Tangent has the story for you…in "Check it Out". Jessica!	11"	Gaining Attention	--	Introduction	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
17	CUT to studio M/S Jessica Tangent	JESSICA: Glamour, glitz, great films – ore people today than ever before are going to the movies – the big screen is big business…..	10"	Gaining Attention	--	Introduction	Studio
18-29	Footages of film stars (12 clips)	JESSICA (V/O): And what brings the Crowds in more than Anything else? A big name star. But big names cost! Working out exactly how much a film star earns involves working with some seriously big numbers. Take Tom Cruise. He walked away with a basic fee of twelve million dollars	6" 10" 7"	Gaining Attention Informing learner of objective Gaining Attention	-- -- --	Introduction	Archive Materials
30	CUT to Jessica in studio with giant video wall	for his role in the legal thriller "The Firm".	4"	Gaining Attention	--	Introduction	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
31	CUT to Jessica in studio	JESSICA: So when the studio accountants wrote out Tom's pay cheque,	5"	Informing learner of objective	--	Talking Head	Studio
32	CUT to footage Tom Cruise	it was essential that they understood "place value".	3"	Informing learner of objective	--	Talking Head	Archive Materials
33	CUT to Jessica holding giant cheque with writing *'Tom Cruise' 'Twelve million dollars' '12 000 000'*	This is how you write twelve million dollars ($12000 000). A one, a two and all these zeros. On their own these digits are pretty unimpressive.	13"	Presenting the stimulus material	--	Talking Head	Studio
34	Shot of coins	Music and Sound Effects	2"	Gaining Attention	--	Interlude	Archive Materials
35	CUT to CU Jessica in studio	What counts is where the individual digits are placed, that's what gives a number its value - and that's why we call it "place value".	8"	Presenting the stimulus material	--	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
36	CUT to graphic cheque *1* appears at end of amount box in unit column a *U* appears on top it *1* turns red and moves to the left with a *T* above that turns black. Red *2* appears in unit column with red *U* above	JESSICA (V/O): So the digit, one, all on its own is worth just one unit, but if we shunt it up one place to the left then the one is now worth ten. Slap a two in here… And ten add two makes twelve.	16"	Presenting the stimulus material	--	Talking Head	Graphic + Effects
37-40	Footage dollar bills + Super with No. 12	Music + Singer + Sound Effects	4"	Gaining Attention	--	Interlude	Archive Materials + Effects

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
41	Graphic cheque on top with *12* in amount box, *12* move to hundreds column and 0 appears in unit column showing: H T U $ 1 2 0	JESSICA (V/O): Let's try paying Tom ten times as much and multiply that twelve by ten. We move all the digits one place to the left then add a zero to hold the numbers in their new place. The one is now worth one hundred. What's more, the two has been promoted as well - it's now worth two lots of ten or twenty. So what we're looking at here is a hundred and twenty dollars.	27"	--	Presenting the stimulus material	Talking Head	Studio
42	CUT to CU Jessica in studio	JESSICA: Let's pay Tom ten times more again	3"	--	Presenting the stimulus material	Talking Head	Studio
43	CUT back to graphic cheque as before green *x 10* appears	JESSICA (V/O): Making a grand total of one thousand two hundred dollars.	8"	--	Presenting the stimulus material	Talking Head Didactic	Graphic + Effects

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
44	Footage Tom Cruise	TOM: Well that's good; I'm going to have to call my agent.	3"	Gaining Attention	--	Humour	Archive Materials
45 46	Tracking shot along row of photographers + Limo pulling up	Music + Sound Effects	3"	Gaining Attention	--	Interlude	Archive Materials
47	CUT to VCU Jessica in studio	JESSICA: Want a spot of Hollywood gossip? Rumour has it that when Jim Carrey made Ace Ventura: When Nature Calls,	9"	Gaining Attention	--	Humour	Studio
48	CUT to still of Jim Carrey (Zoom in)	JESSICA (V/O): he demanded the film company not only hire his personal chef…	3"	Gaining Attention	--	Humour	Graphic
49	CUT to Jessica (VCU) in studio, she shows s toy of Iguana	JESSICA: but an additional cook for his pet iguana!	3"	Gaining Attention	--	Humour	Studio
50	CUT to till of Jim Carrey (Zoom in)	Music + Sound Effects	2"	Gaining Attention	--	Interlude	Graphic
51	CUT to MS Jessica holding giant cheque	JESSICA (V/O): Weekly cost of a personal chef:	4"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
52	CUT to CU cheque appears **PAUSE**	JESSICA (V/O): One thousand two hundred and five dollars. Write that in figures now.	9"	--	Eliciting the performance	Talking Head	Graphic + Effects
53	Graphic for 1205	JESSICA (V/O): So that's one in the thousands column, two hundreds, there aren't any tens but there's a five in the units column. That's one thousand two hundred and five dollars.	10"	--	Providing feedback about performance correctness	Talking Head	Graphic + Effects
54	CUT to footage coins dissolve with The Firm poster (Zoom back).	JESSICA (V/O): Now back to cool man Tom C.	23"	--	Presenting the stimulus material	Talking Head	Archive Materials + Graphic
55 56 57 58	CUT to clips of Tom. Cut to graphic cheque over poster: 1200 and X100 and 120000	His wage cheque currently stands at one thousand two hundred dollars. Let's beef it up a bit by multiplying it by one hundred We shift each digit by two places to the left - and fill it with two zeros at the end to hold the new number in place.					

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
59	CUT to studio w/s Jessica + Giant Video wall	JESSICA: But do you think the studio accountant could get this past Mr. Cruise as his twelve million fee?	4"	--	Gaining Attention	Talking Head	Studio + Effects + Computer for Giant Video Wall
60	CUT to footage of Tom Cruise laughing	Laughter and Music	2"	Gaining Attention	--	Humour	Archive Materials
61 62	CUT to footage of coins (Two shots)	Music + Sound Effects	2"	Gaining Attention	--	Interlude	Archive Materials
63	CUT to studio W/S Jessica + Giant Video wall	JESSICA: You've probably noticed that large numbers like this are often written using a space as a separator. These spaces break up numbers after every three digits, working from the right. And they make it much easier for us to work out exactly how big they are and how to read them.	20"	--	Presenting the stimulus material	Talking Head	Studio + Effects + Computer for Giant Video Wall
64	CUT to graphic: 120 000	JESSICA (V/O): So this little baby is worth one hundred and twenty thousand dollars.	7"	--	Gaining Attention	Talking Head	Graphic + Effects
65 66	CUT to footage of tracking shot along row of photographers + Limo pulling up	Music + Sound Effects	4"	Gaining Attention	--	Interlude	Archive Materials

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
67	CUT to VCU Jessica in the studio	JESSICA: But back to Tom's princely fee. He's after twelve million dollars.	5"	--	Gaining Attention	Talking Head	Studio
68	CUT to graphic cheque comes over Tom's poster. Graphic from 1000000 to 12000000	JESSICA (V/O): A million is a thousand thousands. So twelve million is written like this:	11"	--	Presenting the stimulus material	Talking Head	Graphic + Effects
69	CUT to Jessica + Giant Cheque	JESSICA: There you go Tom!	3"	--	Presenting the stimulus material	Humour	Studio
70	CUT to footage Tom Cruise + Graphics Maths Channel number ball spins in	TOME CRUISE: Thank you!	3"	Gaining Attention	--	Humour	Studio + Computer Graphic
Number of shots: 63			Total time: 305"				

Segment 2. Deadly Divisions

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
71	Deadly Division Caption Jungle of numbers in the background (defocus to focus)	Sound effects	4"	Gaining Attention	--	Leading title for 'Deadly Divisions'	Computer Animation
72	Travelling on a wide shot of a jungle of numbers	There are many laws of the arithmetic jungle, but one is well known to every number: tangle.	13"	Gaining Attention	--	Narrative	Computer Animation
73	A '÷10' is circling menacingly (!)	with a division operator and you will always end up losing. On a dangerous expedition we obtained some quite remarkable footage of this predator at work.	12"	Providing learning guidance	--	Narrative	Computer Animation

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
74	Wide shot of Jungle and numbers Numbers of every shape and size moving gently about.	Here, in the cool of the evening air, a large family of whole numbers are grazing contentedly.	10"	Gaining Attention	--	Narrative	Computer Animation
75	We see the 5000 separate from the pack	Then a careless '5000' strays away from the safety of the herd. It's what the circling	12"	Presenting the stimulus material	--	Narrative	Computer Animation
76	Then, as the ÷ 10 swoops, it drops a decimal point after its final '0'. The ÷ 10 drags the final '0' to the right of the	'divide-by-10' has been waiting for. In a blur of movement, it swoops!	10"	Presenting the stimulus material	--	Narrative	Computer Animation
77	decimal point. The ÷ triumphantly carries off both the decimal	Within seconds the unwary '5000' has had its trailing zero snatched.	8"	Presenting the stimulus material	--	Narrative	Computer Animation
78	point and the trailing '0'. Attack Attack	It's just learned the hard way that when a number is divided by ten, all its digits are dragged painfully one place to the right. And if that final digit is a zero, as it was for the poor '5000', then it is lost forever.	20"	Providing learning guidance	--	Narrative	Computer Animation

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
79	Similar scene to before: numbers milling gently about but this time a wicked-looking '÷100' is hovering above them.	Prepare yourselves to see an even more ferocious attack as a powerful 'divide by 100' launches itself at	10"	Gaining Attention	--	Narrative	Computer Animation
80	As before - the division operator drops a decimal point after final '0' of '9000'; as the ÷ attacks, the final '00' moves to the right of the decimal point before the ÷ carries them off along with the decimal point.	a lumbering '9000'. The poor creature can do nothing as it discovers that when divided by a '100'	7"	Gaining Attention	Gaining Attention	Narrative	Computer Animation
		a number's digits are clawed not one, but <u>two</u> places to the right! And, as with division by 10, if those digits are zeros then they too will be carried off.	16"	Presenting the stimulus material	--	Narrative	Computer Animation + Slow motion
82	90 Leaves his group	The proud '9000', now reduced to a weedy 90, slinks away to join the smaller numbers.	10"	Presenting the stimulus material	--	Narrative	Computer Animation + Dissolve with 47
83	Travelling on Jungle	Those of a nervous disposition should look away now – because the laws of division have no favourites. They treat big and small alike.	10"	Gaining Attention	--	Narrative	Computer Animation

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
84	13 Leaves his number group	In spite of every warning it's been given by its parents, a silly young '13' has wandered off to play on its own.	8"	Gaining Attention	--	Narrative	Computer Animation
85	A Bird like dividing by 10	It's spotted by a circling 'divide by 10'.	9"	Gaining Attention	--	Narrative	Computer Animation
86	'÷10' swoops. Decimal point after the '3', which is then clawed to the right.	Unlucky, 13! As ever, in the attack its digits are clawed one place to the right.	8"	Providing learning guidance	--	Narrative	Computer Animation
87		See how little 13 has been made even smaller, its 3 being pulled to the other side of the decimal point. Because it's not a 0, the 3 isn't carried off. It's not much of a consolation. It means that the little 13 isn't a whole number any more, but 1.3 - a decimal number.	25"	Presenting the stimulus material	--	Narrative	Computer Animation + Slow motion
88	Crane up (Closing sequence)	Automatically banished from the whole numbers family, it trails sadly away to look for a friendly herd of decimals …	12"	Presenting the stimulus material	--	Narrative	Computer Animation
Number of shots: 18			Total time: 204"				

Segment 3. Kenneth Confronts

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
89	Graphics Maths Channel number ball spins in News desk intro W/S Both presenters	Music	3"	Gaining Attention	--	Introduction	Studio + Computer
90	CUT to MS of Jeremy (Zoom in)	JEREMY: Hallo you! The Maths Channel! Cutting edge programmes for viewers who aren't afraid to face up to their maths. That's why we're bringing you the first-ever live hidden camera investigation. Fearlessly exposing mathematical scoundrels out on the streets...	22"	Gaining Attention	--	Introduction for 'Kenneth Confronts'	Studio
91-95	Blue tinted stylised montage Kenneth in various situations title 'Kenneth Confronts' (5 video clips + Caption)	Music + Sound Effects	13"	Gaining Attention	--	Kenneth Confronts' leading title	Archive Materials

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
96	Hidden cam. Baz (Zoom in) Swish pan to Burger Van Kenneth walks to van (whistles)	KENNETH: Close up Baz - remember? Today I shall be going undercover to investigate the great burger-van rip-off. My cameraman Baz and We are going under-cover as members of the ordinary travelling public. Alright Baz? We're going in - and just act normally.	27"	Gaining Attention	--	Narrative	Location
97	Burger-Van Hidden cam. Kenneth POV record symbol Burger van owner serves burger and …	LES: 'Allo mate, what can I get ya? KENNETH (whistles): Eeeer….. double cheese-burger please.	10"	Gaining Attention	--	Narrative	Location
98	Hidden cam. Baz Kenneth (thumbs up to the camera)	LES: Right a double cheese-burger,	3"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
99	Hidden cam. Kenneth POV record symbol	LES: There you go. Right that's two pound thirty five mate. KENNETH: Oh and er a bit of ketchup please. LES: Ketchup? Yup. That's four pence extra - here we go. Ok - whoops sorry about that.... Another four p so that's er...six pounds thirty five innit? KENNETH: Six pounds thirty five - are you sure? LES: Yes - alright alright...see for yourself look ...two pounds thirty five add four equals six pounds thirty five innit?	34" 3"	Presenting the stimulus material Gaining Attention	-- --	Narrative Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
100	CUT to studio Kenneth on screen b/g Jessica	KENNETH: Oh yes... LES: Alright? Alright - enjoy your burger. Ta ta	5"	Presenting the stimulus material	--	Narrative	Studio + Computer
101	CUT to MS Jessica	JESSICA: Now that can't possibly be right - can you see what's gone wrong?	8"	Eliciting the performance	--	Talking Head	Studio
102	Repeat Les adding on calculator (Kenneth's Cam) **PAUSE**	LES: Two pounds thirty five add four equals six pounds thirty five innit?	8"	Eliciting the performance	--	Narrative	Location
103	CUT to MS Jessica	JESSICA: The burger cost	2"	--	Providing learning guidance	Talking Head	Studio
104	CUT to Jessica and coins on hand	JESSICA (V/O): Two pound and thirty-five pence and the ketchup cost four pence, so the correct amount should only be a few pence more that two pounds thirty five.	9"	--	Providing learning guidance	Talking Head	Studio
105	Jessica	JESSICA: You should always try to do a calculation mentally first before resorting to your calculator.	7"	--	Providing learning guidance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
106	Jessica, Kenneth on screen b/g	JESSICA: It should have been two pound thirty-nine pence.	15"	--	Presenting the stimulus material	Talking Head	Studio + Computer
		Kenneth! He's over-charged you by nearly four pounds! KENNETH: How much? Right - I'm going to confront him…	3"	Gaining Attention	--	Narrative	
		JESSICA: No not yet, let's see what other tricks he's up to. Order something else… KENNETH: I've just had a double cheeseburger -	3"	--	Presenting the stimulus material	Narrative	
107	Hidden cam. Baz Kenneth approaches van	KENNETH: I hope this is going on expenses.	7"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
108	Hidden cam. Kenneth POV record symbol	LES: Hi - what do you want?	3"	Gaining Attention	--	Narrative	Location
109	Hidden cam. Baz Les enters into calculator individual costs they also appear as graphics	KENNETH: Umm I'll have a cluck-cluck-double-chicken burger with fries. (Yup) A king-size flamed grilled-whopper with extra gherkins. (Yup) Um an individual glazed tutti-frutti tartlet with cream substitute. (Yup) And... a... passion fruit and pineapple mega-moo milk shake please. LES: Right OK, that's eight pounds twenty mate. KENNETH: Eight twenty? Right	25" 3"	Presenting the stimulus material Gaining Attention	-- --	Narrative Narrative	Location + Graphic of orders' prices
110	Hidden cam. Kenneth POV record symbol	Ambiance	2"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
111	Hidden cam. Baz	LES: There you go, milk shake… right ten pound minus eight pounds twenty, one pound eight p change. KENNETH: Is it?	6" 1"	Presenting the stimulus material Gaining Attention	-- --	Narrative	Location
112	Hidden cam. Kenneth POV record symbol CU Les working calculator	LES: Blimey - look - here we go…. Right look… ten pounds minus eight two 0 equals one pound eight p. OK … alright? KENNETH: Oh - OK.	21"	Presenting the stimulus material	--	Narrative	Location
113	Hidden cam. Baz Kenneth looks at the camera (surprisingly)	Ambiance	2"	Gaining Attention	--	Narrative	Location
114	Jessica (MS)	JESSICA: He's done it again. Let's take a look at that calculation on the numberline.	6"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
115	Video Wall + Graphics	The easiest way to work out how to give change to Kenneth would be to count up from eight pounds twenty to ten pounds. You start on the eight pounds twenty and add on. Plus thirty pence is eight pounds fifty, plus fifty pence is nine pounds plus one pound is ten pounds. So Kenneth should have had one pound eighty pence change. Not one pound eight.	25"	--	Presenting the stimulus material	Talking Head	Effects + Computer
116	Jessica	JESSICA: But the man who served Kenneth was using a calculator and he still got it wrong. So how did that happen? What he forgot is that a calculator doesn't realise you're working in money. With ordinary decimals, any zeroes at the end of a number aren't needed so the calculator ignores them and doesn't bother showing them on display.	26"	--	Providing learning guidance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
116 Con.		So if you enter ten pounds subtract eight pounds twenty this happens.	↓	--	Providing learning guidance	Talking Head	Studio
117	Repeat Les adding up Calculator (Kenneth's Cam)	LES: Equals one pound eight p.	3"	Presenting the stimulus material	--	Narrative	Location + Effects
118	CU Calculator + Graphics	JESSICA (V/O): But remember the calculator has left a zero off so it's not telling you that the answer is one pound eight pence, it's saying that the answer is one point eight pounds. Point eight pounds is eight tenths of a pound and that's the same as eight lots of ten pence or eighty pence.	20"	--	Presenting the stimulus material	Talking Head	Location + Graphics
119	Jessica Kenneth on screen b/g (Kenneth from Baz's Cam)	JESSICA: Kenneth! He should have given you one pound eighty pence change - I think you should confront him.	6"	Gaining Attention	--	Talking Head	Studio + Computer

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
120	Kenneth from Baz's Cam	KENNETH: Oh - about time. OK Baz. …Oooooh I think I've eaten to much - right, I'm going to confront him, I'm gonna...I'm gonna...be sick…	20"	Gaining Attention	--	Narrative	Location
121	Hidden cam. Kenneth POV record symbol	Ambiance	2"	Gaining Attention	--	Narrative	Location
122	Hidden cam. Baz	Ambiance	2"	Gaining Attention	--	Narrative	Location
123	Hidden cam. Baz (JUMP)	BAZ (V/O): Are you going to confront him now Kev?	7"	Gaining Attention	--	Narrative	Location
124	Hidden cam. Baz	BAZ (V/O): On you going to go straight to the tail-piece-to-camera?	3"	Gaining Attention	--	Narrative	Location
Number of shots: 36			Total time: 365"				

Segment 4. Olympiad

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
125	Establishing W/S studio Newsdesk	Music	3"	Gaining Attention	--	Introduction	Studio + Computer
126	MS Jeremy	JEREMY: Moving on. Time now to get physical with decimals with Olympic medallist Kelly Holmes.	5"	Gaining Attention	--	Introduction for 'Olympiad'	Studio
127-129	Video clips (Sidney Olympiad 2000) Various shots Olympic athletes	Music + Sound Effects	2"	Gaining Attention	--	Olympiad's leading title	Archive Materials + Effects
130-142	Caption of Olympiad + 13 video clips	Music + Sound Effects	11"	Gaining Attention	--	Olympiad's leading title	Archive Materials + Effects + Graphic
143	Kelly Holmes + Chromakey	KELLY: I'm Kelly Holmes and welcome to my new quiz "Olympiad" where you can pit your maths skills against the world's top athletes.	8"	Gaining Attention	--	Introduction	Studio + Graphics for Chromakey
144	Footage athlete	Music + Sound Effects	1"	Gaining Attention	--	Interlude	Archive Materials (Slow motion)

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
145	Kelly Holmes	KELLY: This week we're going to see how you shape up with a challenging new event: "Decimals".	4"	Informing learner of objective	--	Introduction	Studio + Graphics for Chromakey
146-150	Footage Sydney Olympics	KELLY (V/O): So equip yourself with a pen and paper and take your position at the start ...Ambiance of stadium	30"	Gaining Attention	--	Introduction	Archive Materials (Slow motion and Dissolve
151	Footage Sydney Olympics	KELLY (V/O): The men's 100m final at the Sydney Olympics.	9"	Presenting the stimulus material	--	Introduction for quiz	Archive Materials + Dissolve with Spectators
152	Full screen graphics with multiple choice answers + **PAUSE**	Maurice Greene takes the gold. But what was his winning time in seconds? Make your choice now.	6"	Eliciting the performance	--	Didactic Voice	Graphic + TV Electronic Effects

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
153	Kelly Holmes appears in left half screen + Graphic	KELLY: You can see all these numbers contain basically the same digits, but they each have a completely different value. The thing to look at is the position of the decimal point. A decimal point splits a number into two parts - the whole part before the point and a fractional part - which is less than 1 - after the point.	22"	--	Presenting the stimulus material	Talking Head	Studio + Graphic
154	Kelly Holmes disappears and Just Graphic remains Graphics numberline with zoom ins to stretch units	KELLY (V/O): 98.7? That's 9 tens, 8 units and 7 tenths That's about 100 seconds, which is well over a minute. Maurice can do a lot better than that! 9.87? That's 9 units… 8 tenths. And seven hundredths. That's about 10 seconds and if that was your choice - you're right!	25" 20"	Presenting the stimulus material Providing feedback about performance correctness	-- --	Didactic Voice Didactic Voice	Graphics number line with zoom ins to stretch units [Animation]

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
155-162	Athlete Maurice Greene runs 100 m + Full Graphic Background	KELLY (V/O): World class men sprinters like Maurice can run 100m in just under 10 seconds But they can't run it *this* fast - 0.987 represents... no units... 9 tenths 8 hundredths... and 7 thousandths... That's about a second!	9"	Presenting the stimulus material	--	Didactic Voice	Archive Materials + Slow motion + Cut between shots
163	Fast motion repeat footage + Slow motion at the end	Fast pace of Music + Sound Effects	4"	Gaining Attention	--	Interlude	Archive Materials (Fast Motion) + Slow motion at the end
164	Kelly Holmes with footage on screen Background	KELLY: Okay, so now you're trained up on decimals, let's see what form you're on with this one	5"	Gaining Attention	--	Introduction	Studio + Graphic in Chromakey + Dissolve with background
165	Full screen footage	KELLY (V/O): This is Jonathan Edward's gold medal winning triple jump	2"	Gaining Attention	--	Introduction	Archive Materials
166	Same footage as 107		7"			Introduction for quiz	Archive Materials + Supper to full graphic

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
167	Freeze screen footage of Jonathan Edwards + Full Graphic of multiple choice + **PAUSE** + PAUSE disappears	KELLY (V/O): How long was the jump? KELLY (V/O): Are you a winner this time?	5" 3"	Eliciting the performance	--	Didactic Voice	Freeze VT Materials + Graphics
168	Jonathan Edwards + the Flag	Sound Effects	2"	Gaining Attention	--	Interlude	Archive Materials
169	Kelly Holmes with footage on screen Background	KELLY: Now, time for round 2. This time you will have to "order" 3 different numbers.	2" 3"	Gaining Attention Informing learner of objective	-- --	Introduction for round two	Studio + Graphics
170-172	Footage of women's pole vault in Sidney Olympiad Vala Flosadottir	KELLY (V/O): In the women's pole vault the three medals were won by Vala Flosadottir (*Flow* - sa - dottir),	7"	Gaining Attention	--	Introduction	Archive Materials
173-175	Footage of women's pole vault in Sidney Olympiad Stacy Dragila	KELLY (V/O): Stacy Dragila	6"	Gaining Attention	--	Introduction	Archive Materials
176-178	Footage of women's pole vault in Sidney Olympiad Tatiana Grigorieva	KELLY (V/O): And Tatiana Grigorieva	10"	Gaining Attention	--	Introduction	Archive Materials + TV Electronic Effects

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
179	Full screen graphic with multiple choice answers + **PAUSE**	KELLY (V/O): These are their best vaults in metres, but they're not in order.	5"	Presenting the stimulus material	--	Didactic Voice	Graphic with triple of Archive Materials footage
		Can you work out who got the gold, the silver, and the bronze? Remember, in pole vault the biggest number gets gold.	14"	Eliciting the performance	--	Didactic Voice	
	Full screen graphic with multiple choice answers	KELLY (V/O): Flosadottir cleared 4.5 metres, that's 4 units… and 5 tenths.	20"	Providing feedback about performance correctness	--	Didactic Voice	
180	Graphics of medals appears	Dragila cleared 4.6 metres, that's 4 units... and 6 tenths. And Grigorieva cleared 4.55 metres. That's 4 units …and 5 tenths… and 5 hundredths. So Flosadottir picked up the bronze, Grigorieva got silver and Dragila took the gold.	22"				Graphic with triple of Archive Materials + Numberline + Graphics of medals at the end

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
181	Stacy Dragila and her gold medal	Sound Effects	3"	Gaining Attention	--	Interlude	Archive Materials
182	Kelly Holmes with footage on screen Background	KELLY: Now try this one.	1"	Providing learning guidance	--	Introduction	Studio + Full graphic background
183	4X100 m Men's relay Sydney Olympics	Music KELLY (V/O): The Men's 4 by 100m Relay Final. [Music stops suddenly]	18"	Providing learning guidance	--	Introduction	Archive Materials
	Freeze frame of 4X100 m Men's relay Sydney Olympics + **PAUSE**	KELLY (V/O): Who got the gold? Brazil 37.9 seconds? USA 37.61 seconds? Or Cuba 38.04 seconds?	10"	Eliciting the performance		Didactic Voice	Freeze frame of Archive Materials + Full graphic screen + multiple choice + PAUSE
	4X100 m Men's relay Sydney Olympics	Music + Sound effects	11"	Gaining Attention	--	--	Archive Materials + Slow motion
184 -186	Happy athletes + flag + graphics Maths Channel number ball spins in Newsdesk intro	KELLY (V/O): Well that's it for Olympiad today. Time for you to get down to some decimal training yourself. Good luck!	13"	Unclassified	Unclassified	Interlude	Archive Materials + freeze fame and the end + graphics
Number of shots: 62			Total time: 351"				

Segment 5. Street Maths

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
187	W/S Studio	JEREMY: And now, a man who always leaves the number buffet with a full plate - it's Kjartan Poskitt and "Street Maths"…	12"	Gaining Attention	--	Introduction for 'Street Maths'	Studio
188 - 193	Street Maths intro sequence montage sight seeing shots + Caption	Music + Sound Effects	10"	Gaining Attention	--	Street Maths' leading title	Archive Materials
194	Kjartan on sea front	KJARTAN: Hi I'm Kjartan Poskitt back on the road with some more Street mats and today I'm in Scarborough and waiting for a bus and being Scarborough the bus is bang on time. Brilliant. Ok lovely! Off we go!	11"	Gaining Attention	--	Introduction	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
195	Kjartan gets on top deck of bus with kids	KJARTAN: Hallo lovely people are you alright? Thanks for joining us – I'm going to try and test your brains a bit – is that alright with you? KIDS: Yes KJARTAN: Right you're feeling sharp – that's what I like to hear.	9"	Gaining Attention	--	Humour	Location
196	Bus Swish pan to Kids	KJARTAN: OK. I want you to try and count quickly in your head after me I'm going to do three numbers you do the fourth one: nine thousand and ninety seven, nine thousand and ninety eight, nine thousand and ninety nine… KIDS: Ten thousand!	11"	Presenting the stimulus material	--	Edutainment	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
197	Kids	KJARTAN (V/O): But they're wrong! Gotcha!	13"	Gaining Attention	--	Edutainment	Location
198	Sight of sea and graphics of number line	KJARTAN (V/O): This number line shows instantly what's gone wrong. Here are the positions of my numbers and everyone shouted ten thousand which is right up here! The next number in this sequence is down here - nine thousand one - hundred!	23"	Providing learning guidance	--	Didactic Voice	Location + Graphics
198	Sight of sea and graphics of number line	KJARTAN (V/O): This number line shows instantly what's gone wrong. Here are the positions of my numbers and everyone shouted ten thousand which is right up here!	23"	Providing learning guidance	--	Didactic Voice	Location + Graphics

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
198 Con.	Sight of sea and graphics of number line	The next number in this sequence is down here - nine thousand one - hundred!		Providing learning guidance	--	Didactic Voice	Location + Graphics
199-208	VT Materials 10 Sequences of bus in the streets of Scarborough and pupils in the bus	Music + Sound Effects	5"	Gaining Attention	--	Interlude	Archive Materials
209-212	Reactions of pupils in the bus	KJARTAN: Bloke goes to a museum and sees a dinosaur skeleton. He says to the attendant, he says, how old is that dinosaur skeleton then? The attendant says it's seventy million years and two weeks old. The fella says how do you work that out? He says well, when I started work here it was seventy million years old and I've been here two weeks...! Come on - than you, yes!	19"	Gaining Attention	--	Humour	Location
214	Kjartan + Pan on Pupils		2"				
215	Swish pan on pupils						
216-222	Montage bus shots top deck on bus Kjartan and kids	Music + Sound Effect	5"	Gaining Attention	--	Interlude	Archive Materials

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
223	Bus	KJARTAN: I want everybody here now please to think of a number between one and nine.	3"	Presenting the stimulus material	--	Edutainment	Location
224	Bus	KJARTAN (V/O): You give me a number. GIRL: 6 KJARTAN (V/O): Lovely - I need another number please...	3"	Presenting the stimulus material	--		Location
225	Bus	KJARTAN (V/O): I need different numbers - we'll have the bloke right at the back there with the glasses... BOY: Five KJARTAN: Six, five and ooh who shall I go for now? That lady right at the front. GIRL: Three	8"	Presenting the stimulus material	--		Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
226	Workings out by Kjartan on board worn by boy	KJARTAN: Right six, five, three. Now strange little trick - right what I've got to do is turn the number round - if I take six five three and turn it around what do I get?	8"	Providing learning guidance	--	Edutainment	Location
227	Pupils	KIDS: Three five six! KJARTAN (V/O): Well done	2"	Providing learning guidance	--	Edutainment	Location
228	Pupils	KJARTAN: Three five six and that there is a minus sign - the take away sign.	6"	Presenting the stimulus material	--	Edutainment	Location
229	Pupils	KJARTAN (V/O): Can you turn round, right how it's done here	2"	Presenting the stimulus material	--	Edutainment	Location
230	Pupils	KJARTAN: You start with three five six, we draw a line to six five three - this is how you do take away. And first of all I'm going to add on four - pa doing, pa doing, pa doing, you get three sixty and then we're going to make it up to four hundred and so we go like	40"	--	Presenting the stimulus material	Edutainment	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
230 Con.	Pupils	that… and add on forty and then we get to there we have to add on two hundred and fifty three. And when you add all those altogether, two five three add forty is two nine three plus four is two hundred and ninety seven. That's a little way of doing subtraction. Thanks Jamie - turn round mate. We've now got to this bit - six five three minus three five six equals two hundred and ninety seven and reverse the digits, reverse the digits and	↓	--	Presenting the stimulus material	Edutainment	Location
231	Pupils	KJARTAN (V/O): how much do I get? KIDS: Seven hundred and ninety two. KJARTAN (V/O): That's the baby, and I'll write that on the board there	5"	Presenting the stimulus material	--	Edutainment	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
232	Pupils	KJARTAN: and finally right at the end I'm going to - add with me -	3"	Presenting the stimulus material	--	Edutainment	Location
233	Pupils	KJARTAN (V/O): the final answer is	2"	Presenting the stimulus material	--	Edutainment	Location
234	W/S	KJARTAN: one thousand and eighty nine - alright? If you thought that was clever	4"	Gaining Attention	--	Edutainment	Location
235	Swish pan to the seaside	KJARTAN (V/O): Would you please now look down there onto the sand...! KIDS V/O REACT	4"	Gaining Attention	--	Edutainment	Location
236	Zoom in to 1089 on sand	KIDS (V/O): REACT	2"	Providing learning guidance	--	Edutainment	Location
237	Kids	KIDS: REACT	1"	Providing learning guidance	--	Edutainment	Location
238	1089 on sand	KIDS (V/O): REACT	1"	Providing learning guidance	--	Edutainment	Location
Number of shots: 52			Total time: 214"				

Segment 6. Weather Report

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
239	CUT to Jeremy's disembodied head moving over a map of UK	JEREMY: Weather now and viewers it's going to be another freezer.	11"	Gaining Attention	--	Introduction for 'Weather Report'	Full Graphic + Chromakey
	Jeremy's head slides over map and places highlight	JEREMY: Last night, in Pratt's Bottom the temperature crept up to just 1 Celsius. The warmest place in The UK was the village of	9"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey
	Graphics number line at side of map	JEREMY: Nasty, at 5 degrees Celsius, whilst down in	6"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey
	FX electrical "fault" on CSO revealing Jeremy in chromakey	JEREMY: Great Bulging the Temperature plummeted to minus 5 degrees Celsius. But the coldest place in the UK was	9"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
239 Con.	Head moves out to the write	JEREMY: Chillingham, at a shivering minus 8 degrees Celsius JEREMY (V/O): Let's make some sense of this data.	10"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey
	Head slides in from left UK map become smaller and slides up left And vertical numberline appears	JEREMY: First we'll put it in order on the Maths Channel number line. At the top end, Nasty at 5....Pratt's Bottom at...Great Bulging at minus 5 and Even lower, Chillingham At minus 8.	14"	Providing learning guidance	--	Edutainment	Full Graphic + Chromakey
	Number line rotates from vertical to horizontal position	JEREMY (V/O): The number line can help us work out the difference in temperature between various locations. So the difference between	14"	Presenting the stimulus material	--	Didactic Voice	Full Graphic + Chromakey
	Head appears Head slides out from right	JEREMY: Pratt's Bottom at 1 degree and Nasty at 5 degrees is 4 degrees.	7"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
239 Con.	Head slides in from left	JEREMY: It was a cold minus five degrees in Great Bulging but the temperature and fallen a further three degrees in Chillingham to minus eight degrees.	14"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey
	Head moves on the numberline Head slides out from the left	JEREMY: And here in chilly Chillingham the temperature would have needed to rise thirteen degrees to be as warm as Nasty at five degrees.	19"	Presenting the stimulus material	--	Edutainment	Full Graphic + Chromakey
	Head appears fx electrical "fault" on CSO revealing Jeremy in chromakey	JEREMY (V/O): The summary then, this is very JEREMY: Definitely a night for snuggling up…with some ... sums… Cut to VT now!	6" 6"	Unclassified	Unclassified	Humour	Full Graphic + Chromakey
Number of shots: 1			Total time: 125"				

Closing Sequence

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
240	CUT to MS Jeremy in studio Lights turn off Credits roll in	JEREMY: And that's it from The Maths Channel. I hope you join us again soon on our … Hello…	9"	--	--	Humour	Studio
241	CUT to WS studio	JEREMY: I was still talking… Right…right…cool!	8"	--	--	Humour	Studio
242	CUT to MS Jeremy	JEREMY: What, what?	5"	--	--	Humour	Studio
243	CUT to WS studio Jeremy using his mobile phone	JEREMY: I'll get my agent on the phone shall I? We'll soon have this sorted out.	14"	--	--	Humour	Studio
Number of shots: 4			Total time: 36"				

Total number of shots: 243
Total Time: 1670" = 27': 50"

Appendix II: Full Script of 'Maths for Grade 5'

Written by: Hamid Pouralimohamad, Monir Jeddi
Educational Consultant: Mohammad H. Hassanpour
Director: Reza Ziaee Doostan
Producer: Hooshang Khajehnoori
Educational Technology Centre for IRIB Educational Network, IRAN - 1996.

Segment 1. Large Numbers

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
1	WIPE TO Zoom in to Year 4 maths book on a background of numbers. Credits superimpose on the background. WIPE TO YELLOW SCREEN	Music	4" 3" 27"	Gaining Attention Informing learner of objective --	-- -- --	Leading title for 'Maths for Primary Schools, Grade 5'	Vision Mixer Effects + Graphic
2	WIPE TO Programme's title slides in. WIPE TO YELLOW SCREEN	Music	8"	Gaining Attention Informing learner of objective	--	Leading title for 'Large Numbers'	Vision Mixer Effects + Graphic

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
3	WIPE TO CU of the different prices, which are attached on bicycles. Camera is panning right and stops when reaches MCU of Greedy	GREEDY (V/O): No it doesn't have good colour and neither a good runner! This one! Oh look at the price it is really expensive! This one is not good either and its price is even worse! Oh my God how expensive are these bicycles! It is too high for me, this one is to low, this one is very expensive! This one is really inexpensive!!!!!! Look at this one its colour is terrible! GREEDY: …and this one!…there is …there is no more!	5" 25"	Gaining Attention Presenting the stimulus material	-- --	Narrative	Location
5	MCU Seller	SELLER: Hi little boy! May I help you?	3"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
6	MCU Greedy	GREEDY: First, I am the person who has to say hi! Second I am in grade 5 and a real big man and not a little boy, and third I don't know which kinds of bicycle I would be able to buy with the money I have got?	6" 6"	Gaining Attention Presenting the stimulus material	-- --	Narrative	Location
7	MS Greedy and Seller	SELLER: Excuse me. May I ask you how much money have you got for the bicycle?	5"	Presenting the stimulus material	--	Narrative	Location
8	MCU Greedy	GREEDY: How much?!...yes...that's fine...I mean it is enough it is 66370 Rials.	8"	Presenting the stimulus material	--	Narrative	Location
9	MS Greedy and Seller	SELLER: But I am terribly sorry little man; you are unable to buy a new bicycle with this amount. GREEDY (V/O): Oh really?	4" 7"	Gaining Attention Presenting the stimulus material	-- --	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
9 Con.	MS Greedy and Seller	SELLER: You just are able to choose a second hand bicycle or tricycle.	↓	Presenting the stimulus material	--	Narrative	Location
10	MCU Greedy	GREEDY: You are kidding! I have heard that you have got plenty of nice bicycles on very fair prices. Now would you please let me show the lowest price one? I will try to manage the money.	5" 6"	Gaining Attention Presenting the stimulus material	-- --	Narrative	Location
11	MS Greedy and Seller	SELLER: This one is on the lowest price of bicycle in our shop.	9"	Presenting the stimulus material	--	Narrative	Location
12	FS Bicycle	GREEDY (V/O): You mean that one with its high handlebar? SELLER (V/O): Yeh	5"	Gaining Attention	--	Narrative	Location
13	MCU Greedy	GREEDY: Oh dear, its colour is not really nice but it seems...hum...OK. How much is it then?	13"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
14	MCU Seller	SELLER: Just for you, who are in grade 5 and with a special discount will be 143920 Rials.	7"	Presenting the stimulus material	--	Narrative	Location
15	MCU Greedy WIPE TO YELLOW SCREEN	GREEDY: 143…92..0..how much?!!	4"	Gaining Attention	--	Narrative	Location
Number of shots: 15			Total time: 160"				

Segment 2. Place Value

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
16	FS Classroom	TEACHER: Dear Mohsen, would you please read your number. MOHSEN: 734393 TEACHER: That's fine	8"	--	Eliciting Performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
17	MS Reza and Greedy	GREEDY: What's going on here? REZA: Teacher said we have to write a-six-digits number, which its tenth in thousandth row has to be 3	10"	--	Informing learner of objective	Introduction	Studio
18	FS Classroom	TEACHER: What about you dear Javad, have you done yours? JAVAD: 13437 TEACHER: Well done, you did it right too.	5" 3"	-- --	Eliciting Performance Providing feedback about the performance correctness	Talking Head	Studio
19	MS Teacher	TEACHER: Whose turn is it now? The one who comes late! Greedy!	5"	--	Gaining Attention	Humour	Studio
20	MS Reza and Greedy	GREEDY: Yes sir! TEACHER (V/O): Give me a number with five digits.	10	--	Eliciting Performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
20 Con.	MS Reza and Greedy	GREEDY: Five digits?! TEACHER (V/O): Yes GREEDY: OK,,,that is …yeh I found…66370 Rials!	10"	-- --	Eliciting Performance Gaining Attention	Talking Head Edutainment	Studio
21	MS Teacher	TEACHER: What? Rials? GREEDY (V/O): Yes TEACHER: Why in Rials?	4"	--	Gaining Attention	Edutainment	Studio
22	MS Reza and Greedy	GREEDY: I need this money to buy the bicycle. TEACHER (V/O): Still thinking about the bicycle…	7"	--	Gaining Attention	Humour	Studio
23	CU Nuts' board	TEACHER (V/O): (makes 66370 by his board) what is the unit in its thousandth row?	7"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
23 Con.	CU Nuts' board	PUPILS (V/O): Can I say…can I say?	↓	--	Presenting the stimulus material	Talking Head	Studio
24	LS Classroom	TEACHER: Reza, you tell me.	2"				
25	MS Reza and Greedy	REZA: Number 6	2"				
26	MCU Teacher and Nuts' board	TEACHER: Which one? REZA (V/O): The 6 in dark red TEACHER: Now I will make another one and let see can you read this?	4" 8"	-- --	Eliciting Performance Presenting the stimulus material	Talking Head	Studio
27	MS Reza and Greedy	GREEDY: How many have you written? REZA: I have written 8 numbers. TEACHER (V/O): Look at this GREEDY: If you knew what colour the bicycle has, what horn it has, oh dear oh dear…	11"	--	Gaining Attention	Interlude	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
28	MCU Teacher and Nuts' board	TEACHER: Read this one. JAVAD (V/O): Can I say that? TEACHER: Yes.	6"	--	Eliciting Performance	Talking Head	Studio
29	LS Classroom	JAVAD: 348252	6"			Talking Head	Studio
30	MCU Teacher and Nuts' board	TEACHER: (to the camera) and now I will make another one for you at home. I will change this into…	10"	--	Assessing the performance	Talking Head	Studio
31	MS Reza and Greedy	GREEDY: Write the price of my bicycle sir!	1"	Gaining Attention	--	Edutainment	Studio
32	MCU Teacher and Nuts' board	TEACHER: (to the camera) can you read this number…what is the unit in the thousands' row?	7"	--	Assessing the performance	Talking Head	Studio
33	CU of Nuts' board	TEACHER (V/O): …what is the tenth is the thousands' row?	6"	--	Assessing the performance	Talking Head	Studio
Number of shots: 18			Total time: 126"				

Segment 3. Multiply by 10, 100, and 1000

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
34	WIPE TO Titles slide in: Fifth part -Multiply by10, 100, 1000 -Mental calculation WIPE TO YELLOW SCREEN	Music	9"	Informing learner of objective	--	Leading title for 'Multiply by 10, 100, and 1000	Vision Mixer Effects
35	WIPE TO PAN Left CU Cubs make 60	TEACHER: There are some cubs on your desks.	6"	Gaining Attention	--	Talking Head	Studio
36	CU of rows of cubes in two groups of 4 and 7	TEACHER (V/O): How many cubs make each tenth?	5"	--	Eliciting the performance	Talking Head	Studio
37	CU rows of cubes	PUPILS: 10	2"	--	Providing feedback about the performance correctness	Talking Head	Studio
38	CU Teachers' hand	TEACHER: Well done! Each tenth contains ten units.	5"			Talking Head	Studio
39	LS Classroom	TEACHER: Now I want you tell me how many of cubs like this you have?	6"	--	Eliciting the performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
40	MS Reza and Greedy	GREEDY: I will tell you soon, one… two…three… TEACHER (V/O): What are you doing? GREEDY: I'm counting Sir!	6"	Gaining Attention	--	Edutainment	Studio
41	MS Teacher	TEACHER: Forget it! There is a simple method to do that!	3"	--	Informing learner of objective	Talking Head	Studio
42	MS Mohsen and Javad	MOHSEN: Shall I tell you the method? TEACHER (V/O): Yes please.	2"	--	--	Talking Head	Studio
43	LS Classroom	MOHSEN: I have got seven tenths so it contains 70.	4"	--	Presenting the stimulus material	Talking Head	Studio
44	MS Teacher	TEACHER: Well done! How did you find it?	3"	--	Providing feedback about the performance correctness	Talking Head	Studio
45	LS Classroom	MOHSEN: I found that I have got seven tenth of cubs and each one has got ten units.	7"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
46	MS Teacher	TEACHER: Well done! Seven tenths so! MOHSEN (V/O): It means 70 units TEACHER: I will write it here. Reza how many do you have?	14"	--	Presenting the stimulus material	Talking Head	Studio
47	MS Reza and Greedy	REZA: Six-tenths, 60 units.	3"	--	Presenting the stimulus material	Talking Head	Studio
48	MCU Teacher	TEACHER: Fine, six-tenths equal 60 (6X10=60) Now put your cubs together and tell me how many will you have?	10"	--	Presenting the stimulus material	Talking Head	Studio
49	MS Mohsen and Javad (they talk to each other)	MOHSEN: They are 110 cubs or units.	7"	--	Presenting the stimulus material	Talking Head	Studio
50	MS Teacher	TEACHER: Wow! How could you find it this fast?	2"	--	Gaining Attention	Talking Head	Studio
51	MS Mohsen and Javad	MOHSEN: 7 add 4 equals 11 and we multiply 11 by 10.	3"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
52	MS Teacher	TEACHER: Yes, 7+4 equals 11 and 11 tenths are 110.	10"	--	Presenting the stimulus material	Talking Head	Studio
53	MS Reza and Greedy	GREEDY: Do we put two zeros if it was multiply by 100 instead of 10?	11"	--	Providing learning guidance	Talking Head	Studio
54	MS Teacher	TEACHER: Well done! What did he says? Greedy says what happen if we multiply 11 by 100. So look, each number multiply by one equals the same number and we can add two zeros here. Now I will give you some more examples, are you ready? PUPILS (V/O): Yes sir!	6" 20" 10"	-- -- --	Providing learning guidance Presenting the stimulus material Eliciting the performance	Talking Head	Studio
55	MS Teacher	TEACHER: For example I'll take 924 GREEDY (V/O): 924	7"	--	Eliciting the performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
56	LS Classroom	TEACHER: Multiply by 1000 MOHSEN: Can I say the answer? TEACHER: Please do!	8"	--	Eliciting the performance	Talking Head	Studio
57	MS Reza and Greedy	MOHSEN: 9 units equal 9	2"	--	Eliciting the performance	Talking Head	Studio
58	LS Classroom	TEACHER: We can write the whole number here (he writes 924)	3"	--	Presenting the stimulus material	Talking Head	Studio
59	MS Teacher	MOHSEN (V/O): And we can add three zeros. TEACHER: (Writes 924000) well-done dear Mohsen.	6"	--	Presenting the stimulus material	Talking Head	Studio
60	LS Classroom	TEACHER: Now I will write another one. 756 multiply...hum...100 GREEDY: V/O Can I tell the answer?	8"	--	Eliciting the performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
60 Con.		TEACHER: Yes please!	↓	--	Eliciting the performance	Talking Head	Studio
61	MS Reza and Greedy	GREEDY: We can write the whole number and add two zeros.	6"	--	Presenting the stimulus material	Talking Head	Studio
62	MS Teacher	TEACHER: That's it! I think you learnt the rule and understand how to multiply a number by 10 and 100. Now I want to make a competition between you all.	10" 3"	-- --	Gaining Attention Providing feedback about the performance correctness	Talking Head	Studio
63	MS Reza and Greedy	GREEDY: I am the winner! That's for sure! TEACHER (V/O): How about the others? PUPILS: Yes, we like that!	4"	Gaining Attention	--	Humour	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
64	MS Teacher	TEACHER: The number is 2948 multiply by 1000 PUPILS (V/O): Can I say…I know that…! TEACHER: Calm down, not now, you have to write it down in your notebooks.	10" 12"	--	Eliciting the performance Gaining Attention	Talking Head	Studio
65	LS Classroom	TEACHER: This is the other number: 384 multiply 100 and a very large one like 9999 multiply 10000. You can start now!	4"	--	Eliciting the performance	Talking Head	Studio
66	MS Teacher	TEACHER: (to the camera) what about you? Would you like to write the numbers as well?	8"	--	Assessing performance	Talking Head	Studio
67	MS Reza and Greedy (They are writing some notes)	Music	3"	--	Assessing performance	Talking Head	Studio
68	On the whiteboard: 2948X1000= 348X100= 9999X10000=	Music	4"	--	Assessing performance	Talking Head	Studio
Number of shots: 35			Total time: 252"				

Segment 4. Multiply by 1000

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
69	WIPE TO Caption of 1000+ 1000+1000 +1000 +1000=5000 moves in and out Caption 5X1000=5000 moves in.	NARRATOR: Wow! How many adds?	10"	Gaining Attention	--	Didactic Voice	Computer Animation
		Don't you think it would be another and easy way?	4"	Providing Learning Guidance	--		
		NARRATOR: Yes, multiply.	3"	Providing feedback about performance correctness	--	Didactic Voice	Computer Animation
		NARRATOR: If we multiply a number by 1000 the result would be the same number plus three zeros.	10"	Presenting the stimulus material	--	Didactic Voice	Computer Animation
Number of shots: 1			Total time: 27"				

Segment 5. Mental Calculations

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
70	FADE IN TO FIRST STORY FADE OUT TO BLACK	Mute	8"	--	--	Leading title for 'Mental Calculations'	Vision Mixer Effects
71	FADE IN TO LS A Taxi approaches towards the camera and stops. Passengers get off.	Ambiance (Outdoor noises)	7"	Gaining Attention	--	Narrative	Location
72	CU Passenger A	PASSENGER How much should I pay?	5"	Presenting the stimulus material	--	Narrative	Location
73	CU Taxi driver	TAXI DRIVER Is it for four people?	2"	Presenting the stimulus material	--	Narrative	Location
74	CU Passenger A	PASSENGER Well...I think so!!	4"	Gaining Attention	--	Narrative	Location
75	CU Taxi driver	TAXI DRIVER 95 Tomans for per person	2"	Presenting the stimulus material	--	Narrative	Location
76	CU Passenger A	PASSENGER How much is it in total?	2"	Presenting the stimulus material	--	Narrative	Location
77	CU Taxi driver FADE OUT TO BLACK	TAXI DRIVER In total? I have to think!	4"	Gaining Attention	--	Narrative	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
78	FIDE IN TO Caption – 15 MINUTES LATER FADE OUT TO BLACK	Mute	11"	Gaining Attention	--	Narrative	Vision Mixer Effects
79	FADE IN TO FS Camera is panning right on passengers, which are waiting for the result! Two of them are looking through a map on the back of taxi; one has sat on the ground and leant to the taxi! Passenger A has leant and slept on the front window of the taxi. Taxi driver gets off the taxi and awakes passenger A FIDE OUT TO BLACK	TAXI DRIVER Sir…sir it is 380 Tomans PASSENGER What? TAXI DRIVER You fare sir! PASSENGER Oh! That's fine. Here you are (to the others) Lets go!	11" 10"	Gaining Attention Presenting the stimulus material	-- --	Narrative Narrative	Location Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
80	FIDE IN TO Caption – SECOND STORY FADE OUT TO BLACK	Mute	8"	--	--	Leading title for the second part	Vision Mixer Effects
81	FADE IN TO LS - A Taxi approaches towards the camera and stops. Passengers get off.	Ambiance (Outdoor noises)	8"	Gaining Attention	--	Narrative	Location
82	Cu Passenger A	PASSENGER: Would you please let me know how much should I pay? We are in hurry!	6"	Presenting the stimulus material	--	Narrative	Location
83	BCU Taxi Driver	TAXI DRIVER: You are four, the fair for each person is 95 Tomans; in total you have to pay 380 Tomans	4"	Presenting the stimulus material	--	Narrative	Location
84	CU Passenger A WIPE TO YELLOW SCREEN	PASSENGER (to the camera): What a quick respond!	5"	Gaining Attention	--	Narrative	Location
Number of shots: 14			Total time: 97"				

Segment 6. Decimals I

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
85	WIPE TO Titles slide in: Part 10 Decimals WIPE TO YELLOW SCREEN	Music	8"	Informing learner of the objective	--	Leading title for 'Decimals I'	Vision Mixer Effects
86	WIPE TO MS Teacher	TEACHER: Look at the cards on the whiteboard, how many equal sections are in each card?	4"	--	Gaining Attention	Talking Head	Studio
87	LS Classroom	PUPILS: 100 TEACHER: Well done!	3"	--	Presenting the stimulus material	Talking Head	Studio
88	MS Reza and Greedy	TEACHER (V/O): Greedy are you with us? GREEDY: Yes Sir! What a lovely 100s section cards!	3"	--	Gaining Attention	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
89	MS Teacher	TEACHER: How many sections of the first card have I painted in green? PUPILS (V/O): Hundredth! TEACHER: Well done! Hundredth What about this one? TEACHER: Mohsen you tell this MOHSEN: Ten hundredth TEACHER: Well done! MOHSEN: Or one tenth TEACHER: Shall we say one tenth?	19"	--	Eliciting the performance	Talking Head	Studio
90	FS Classroom	PUPILS: Yes!	2"	--	Eliciting the performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
91	MS Teacher	TEACHER: Well done! Yes we can say one tenth as well. Reza! What about this card?	8"	--	Presenting the stimulus material	Talking Head	Studio
92	FS Classroom	REZA: There are 100 equal sections, which 15 of them are painted in green.	5"		Eliciting the performance	Talking Head	Studio
93	MS Teacher	TEACHER: Great! So how do we read it?	6"	--	Gaining Attention	Talking Head	Studio
		PUPILS (V/O): Fifteen hundredth are in green					
		TEACHER: I know Greedy knows everything! So this is why I don't ask him.	5"	--	Eliciting the performance		
		Well, this card is divided into 10 equal sections how many of them have I painted in green?	9"	--	Eliciting the performance		
94	FS Classroom	PUPILS: Three sections	2"	--	Eliciting the performance	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
95	MS Teacher	TEACHER: That's right! I have painted three sections. What about this one? How many equal sections are in this one? PUPILS: 10 TEACHER: How many of them are in green?	12"	--	Eliciting the performance	Talking Head	Studio
96	FS Classroom	PUPILS: 7	1"	--	Eliciting the performance	Talking Head	Studio
97	MS Teacher	TEACHER: 7 sections or seven tenth. What about this one?	5"				
98	LS Classroom	PUPILS: Ten tenth!	3"				
99	MS Teacher	TEACHER: All of it or ten tenth. OK now read them all aloud!	6"	--	Providing learning guidance	Talking Head	Studio
100	FS Classroom	PUPILS: Seven tenth, three tenth, fifteen-hundredths, ten hundredths or one-tenth, one hundredth.	7"				

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
101	MS Teacher	TEACHER: What is the similarity in all these cards?	5"	--	Eliciting the performance	Talking Head	Studio
102	FS Classroom	TEACHER (V/O): Can you tell me Reza? REZA: All denominators have ended by zeros. GREEDY: No! Denominators are 10 or 100.	5" 4"	--	Eliciting the performance	Talking Head	Studio
103	MS Teacher	TEACHER: Yes, that's right. See Reza! Greedy is right! Denominators are 10 or 100. Those fractions, which their denominators are 10 or 100 are called decimal function. What are they called?	15"	--	Presenting the stimulus material	Talking Head	Studio
104	MS Mohsen and Javad	PUPILS: Decimal fraction	2"			Talking Head	Studio
105	MS Teacher	TEACHER: Decimal means of tenths. Do you remember that we had ordinary fractions before?	14"		Stimulating recall of prerequisite learning	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
105 Con.	MS Teacher	In ordinary fractions you can divide a number into any equal sections you like but in decimal fractions the denominators have to be only 10 or 100. We also able to write these numbers like follows. Look at the table that I want to draw for you.	12"	--	Presenting the stimulus material	Talking Head	Studio
106	MS Reza and Greedy	REZA: Is it the multiply table? GREEDY: It is more street maps to me!	11"	--	--	Talking Head	Studio
107	MS Teacher	TEACHER: Are you ready? I will draw a line here, and a red one here and another one here.	18"	--	Gaining Attention	Talking Head	Studio
108	MS Reza and Greedy	GREEDY: So!	3"	--	--	Talking Head	Studio
109	MS Teacher	TEACHER: I write here Unit, here Tenths, and here Hundredths.	9"	--	Presenting the stimulus material	Talking Head	Studio
110	MS Reza and Greedy	GREEDY: Well! (He writes on his notebook)	2"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
111	MS Teacher	TEACHER: Now, I'll put these numbers into this table. Boys! Is it possible to put ten tenths into this table?	9"	--	Presenting the stimulus material	Talking Head	Studio
112	MS Reza and Greedy	GREEDY: Don't know Sir!	1"			Talking Head	Studio
113	MS Teacher	TEACHER: Ten tenths is equal one, so we ignore this one. Lets put seven tenths. Say! Seven what?	7"	--	Presenting the stimulus material	Talking Head	Studio
114	LS Classroom	PUPILS: Seven tenths! TEACHER: What about this one?	5"	--	Eliciting the performance	Talking Head	Studio
115	MS Teacher	PUPILS (V/O): Three tenths TEACHER: This one	11"	--	Eliciting the performance	Talking Head	Studio
116	LS Classroom	PUPILS: Ten hundredths	4"	--	Eliciting the performance	Talking Head	Studio
117	MS Teacher	TEACHER: Well done. This one!	4"	--	--	Talking Head	Studio
118	LS Classroom	PUPILS: One hundredths	2"	--	--	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
119	MS Teacher	TEACHER: It doesn't carry tenth, so we put zero. Now look here, I want to put these numbers out of this table. Is there any whole part?	16"	--	Presenting the stimulus material	Talking Head	Studio
120	LS Classroom	GREEDY: No TEACHER: These numbers are all less than one;	3"	--	Presenting the stimulus material	Talking Head	Studio
121	MS Teacher	TEACHER: so I will put zero here, here, here, and here. Because they are not carrying whole part. Look here! I will bring these numbers out of the table; first I will draw some pointers, which help you to follow the new shape of numbers. I reshape this red line into the point.	30"	--	Presenting the stimulus material	Talking Head	Studio
122	MS Reza and Greedy	GREEDY: What does it call Sir?	4"	--	--	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
123	MS Teacher	TEACHER: It is called 'Decimal Point'. A decimal point splits a number into two parts - the whole part before the point and a fractional part - which is less than 1 - after the point. Is that clear?	9"	--	Presenting the stimulus material	Talking Head	Studio
124	MS Reza and Greedy	GREEDY: Yes Sir!	2"	--	Presenting the stimulus material	Talking Head	Studio
125	MS Teacher	TEACHER: As you can see, we have a right place and a left place. What do I have on the left hand side?	2"	--	Presenting the stimulus material	Talking Head	Studio
126	LS Classroom	PUPILS: Zero!	2"	--	Presenting the stimulus material	Talking Head	Studio
127	MS Teacher	TEACHER: Yes, zero, zero, zero, zero, and one zero here. Now what do I have on the right hand side?	7"	--	Presenting the stimulus material	Talking Head	Studio
128	MS Reza and Greedy	PUPILS: Seven tenths	2"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
129	MS Teacher	TEACHER: Well done! And we can read this: nil whole part and seven tenths or seven tenths. What about this one? PUPILS: Three tenths TEACHER: And here	7" 3"	--	Presenting the stimulus material Eliciting the performance	Talking Head	Studio
130	MS Reza and Greedy	PUPILS: Fifteen hundredths	1"	--	--	Talking Head	Studio
131	MS Teacher	TEACHER: And this	2"	--	--	Talking Head	Studio
132	MS Reza and Greedy	GREEDY: Hum…?	1"	--	--	Talking Head	Studio
133	MS Teacher	TEACHER: Concentrate Greedy! PUPILS: Ten hundredths TEACHER: And here?	4"	--	Gaining Attention	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
133 Con.	MS Teacher	PUPILS: One hundredth TEACHER: So, what does it mean? It means the right hand side is a decimal number and on the left hand side is the whole part.	10"	--	Presenting the stimulus material	Talking Head	Studio
134	LS Classroom	JAVAD: What is the use of units in the table?	3"	--	Gaining Attention	Talking Head	Studio
135	MS Teacher	TEACHER: If we had the whole part, for example 2, we wrote this in the table under the unite: 2.15. it means number 2 is the whole part of the number. That was a very good question!	14"	--	Presenting the stimulus material	Talking Head	Studio
136	MS Mohsen and Javad	MOHSEN: If there was a whole part in the table, how do we read this?	5"	--	Gaining Attention	Talking Head	Studio
137	MS Teacher	TEACHER: Fine! If it was for example 3.5 we can say three point five tenths or three point five. If it was like this 3.15	20"	--	Presenting the stimulus material	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
137 Con.	MS Teacher	it reads three point fifteen hundredths or three point fifteen. And if there was a 2 here like 23.15 how do you read this?	↓	--	Presenting the stimulus material	Talking Head	Studio
138	LS Classroom	PUPILS: Twenty-three point fifteen	2"				
139	MS Teacher	TEACHER: And the last point is: Those numbers, which are carrying decimal points, are called decimal numbers and not decimal fractions.	20"	--	Presenting the stimulus material	Talking Head	Studio
140	MS Mohsen and Javad	MOHSEN: Sir! You had a syntax error in writing decimal!	2"	--	Gaining Attention	Talking Head	Studio
141	MS Teacher	TEACHER: Thank you! I did it on purpose to see whether you are with me or not! It shows that you are; well done!	8"	--	Gaining Attention	Talking Head	Studio
142	LS Classroom	JAVAD: Sir, you can put the 10/10 into the table as well.	5"	--	Gaining Attention	Talking Head	Studio

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
143	MS Teacher	TEACHER: Yes, you are right, but as we are talking about decimal numbers we did ignore this. Well I hope you have learnt decimal numbers. (to the camera) And you as well, and now you can do your homework.	11"	--	--	Talking Head	Studio
Number of shots: 59			Total time: 446"				

Segment 7. Decimals II

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
144	Moving captions: 1/10 Kilograms = 100 Grams 1/100 Kilograms = 10 Grams	NARRATOR: One kilogram is equal 1000 grams NARRATOR: so we can say 100 grams is equal 1/10 kilogram	30"	Presenting the stimulus material	--	Didactic Voice	Computer Animation

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
144 Con.	1/1000 Kilograms = 1 Gram Appear from two sides of the screen	NARRATOR: 10 grams is equal 1/100 kilograms NARRATOR: and one gram is equal 1/1000 kilograms.	↓	Presenting the stimulus material	--	Didactic Voice	Computer Animation
Number of shots: 1			Total time: 30"				

Segment 8. Decimals III

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
145	CU Grocer's hand put some weighting stones in to the scale	Music	3"	Gaining Attention	--	Introduction	Location
146	MS Grocer is weighting 5 grams of Ox-tongue. Zoom in to the scale and superimpose on the table of place value FADE OUT TO BLACK	NARRATOR: Do you know five grams are equal how many kilograms?	24"	Eliciting the performance	--	Didactic Voice	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
147	FADE IN TO CU Grocer's hand put some weighting stones in to the scale	Music	5"	Gaining Attention	--	Introduction	Location
148	MS Grocer is weighting	NARRATOR: And now he is weighing 25 grams ANNAB.	4"	Gaining Attention	--	Introduction	Location
149	CU scale Zoom in to the scale and superimpose on the table of place value FADE OUT TO BLACK	NARRATOR: How many kilograms are equal to 25 grams of ANNAB?	21"	Eliciting the performance	--	Didactic Voice	Location
150	FADE IN TO CU Grocer's hand put some weighting stones in to the scale	Music	5"	Gaining Attention	--	Introduction	Location
151	CU Grocer's hand put some dry flame into scale. Zoom in superimpose on place value table.	NARRATOR: And here are 255 grams DRY FLAME. How many kilograms are equal to 255 grams?	21"	Presenting the stimulus material	--	Didactic Voice	Location

Shot No.	Video	Audio	Time	Events of Instruction		Production Style/Treatment	Production Platform
				By Televisual Materials	By Direct Teaching Materials		
152	MS Confectioner is weighting some cookies	NARRATOR: Do you know how to write	8"	Eliciting the performance	--	Didactic Voice	Location
153	CU Needle of scale	NARRATOR: two kilograms and three hundred grams? MUSIC FADES OUT	8"	Eliciting the performance	--	Didactic Voice	Location
Number of shots: 9			Total time: 99"				

Total number of shots of 'Maths for Grade 5': 153
Total time of 'Maths for Grade 5': 1237"= 20': 37"

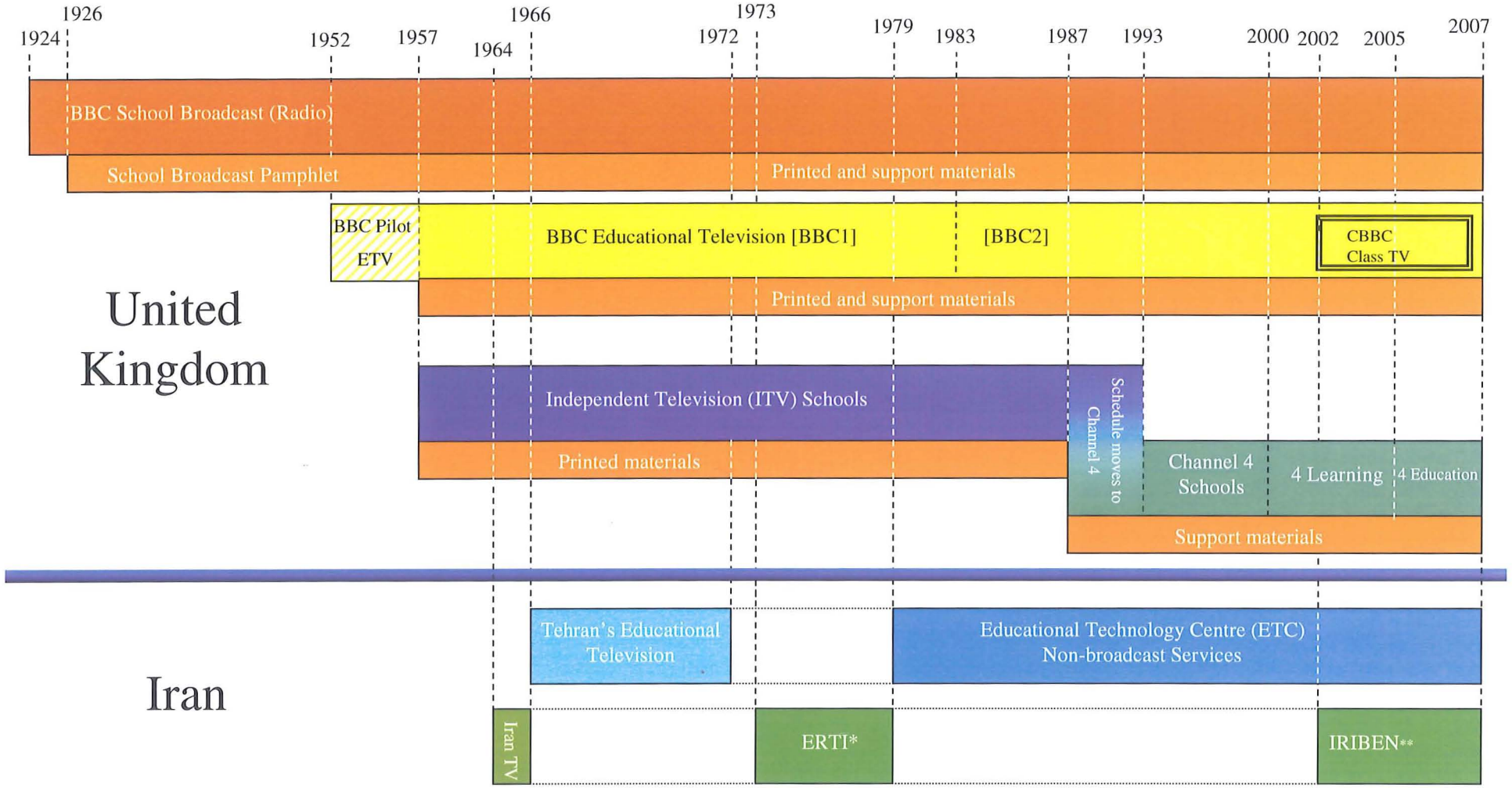
Appendix III

Programmes' schedules for IRIB Network 3 and IRIBEN on Saturday[1] (1381/11/12)[2] [2003/03/01]

IRIB Network 3[3]	IRIBEN[4]
06:00 Selections of sport programmes 07:30 Koran 07:45 Light sport practice 08:00 Morning and life 09:15 Atieh (serial) 09.45 News 10:00 Young's variety 10:30 Morning and health 11:00 Opening 12:30 Window 13:15 Wartime's love (serial) 14:15 Under the sky of the city 15:00 Sport report 16:30 Fillip 17:00 Along with sport 18:00 Wild world's secrets 18:30 Live coverage of England football premiership 20:30 Sport news 20:45 Green Voyage (serial) 21:30 Poems for Imam Hossain 21:45 Council's election 22:00 News 22:15 Special programme on anniversary of martyr of Imam Mohammad Taghi (P) 23:00 Live coverage of Italian football clubs 01:00 Selection of sport programmes	13:15 School Time 13:51 Primary's games and shows 14:13 Arabic (year 8 – pat 8) 14:30 Workshop for Designing Traditional Calligraphy 15:00 Health and Emergency Medical Service 15:45 Less than three minutes 15:50 Food's World 16:00 Islamic Management (PNU) 16:30 General Psychology (PNU) 17:00 Let's know more about 'Konkur' (part 23) 17:25 Less than three minutes 17:45 Litany, Koran, Izan (Call to prayer) 17: 50 Management for all 18:00 A glance to the nature 18:15 Maths for primary school (year 1) 18:30 Teachers' training 18:50 Maths for lower secondary schools (year 6) 19:10 Physics year 10 19:30 The roots of Islamic Revolution 20:00 The function of maths for management (PNU) 20:30 Introductions to sociology (PNU) 21:00 Interior design for home (part 33) 21:45 The magic of management 21:50 Less than three minutes 22:00 Half century of sovereignty 22:35 Your views on IRIBEN (part 50)

[1] Weekdays in Iran begins on Saturdays and ends on Fridays.
[2] Iranian calendar.
[3] Source: http://www.soroushpress.ir/iribprogs/, (12 April 2003).
[4] Source: http://www.irib.com/educationtv/, (12 April 2003).

Appendix IV- Comparative Timeline of Schools Programming in the UK and Iran [1924 – 2007]



* Educational Radio Television of Iran (ERTI)

** Islamic Republic of Iran Broadcasting Education Network (IRIBEN)

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